

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF NEW YORK

\*\*\*\*\*

BLUE CROSS AND BLUE SHIELD OF  
NEW JERSEY, INC., et al,  
Plaintiffs

COPY

vs.

98 Civ. 3287 (JBW)

PHILIP MORRIS, INCORPORATED,  
et al

Defendants

\*\*\*\*\*

VOLUME: I PAGES: 1-150

VIDEOTAPED DEPOSITION of  
HARVEY MORTON SAPOLSKY, Ph.D., a witness  
called on behalf of the Plaintiffs  
pursuant to the Federal Rules of Civil  
Procedure, before Judith McGovern  
Williams, Certified Shorthand Reporter  
No. 130993, Registered Professional  
Reporter, Certified Realtime Reporter, and  
Notary Public in and for the Commonwealth  
of Massachusetts, at the offices of  
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on Tuesday, February 27, 2001, commencing  
at 9:42 a.m.

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52434 3900

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## P R O C E E D I N G S

MR. FITZPATRICK: We will mark  
this as Sapolsky 1.

(Expert report of Harvey M. ,  
Sapolsky, 2-17-00 marked  
Exhibit No. 1 for  
identification.)

MR. FITZPATRICK: This will be  
Sapolsky 2.

(Supplemental report of Harvey M.  
Sapolsky, February 6, 2001  
marked Exhibit No. 2 for  
identification.)

MR. FITZPATRICK: And this will  
be Sapolsky 3.

(E-mail dated 2-24-2001 to  
Mr. Fitzpatrick from Mr. Stoeever  
and two pages attached marked  
Exhibit No. 3 for  
identification.)

THE VIDEOGRAPHER: We are now  
recording and on the record. My name is  
George Libbares. I am a Certified Legal  
Video Specialist for National Video

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1 Reporters Incorporated. Our business  
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3 243, Boston, Massachusetts 02110.

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5 G & M Court Reporters, Limited of  
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7 Massachusetts 02111.

8 Today is February 27, 2001, and  
9 the time is 9:43 a.m. This is the  
10 deposition of Harvey M. Sapolsky in the  
11 matter of Blue Cross and Blue Shield of  
12 New Jersey Incorporated et al, Plaintiffs,  
13 versus Philip Morris Incorporated, et al,  
14 Defendants, in the United States District  
15 Court, Eastern District of New York, Case  
16 Number 98 Civ. 3287 JBW.

17 This deposition is being taken at  
18 Exchange Place, Boston, Massachusetts, on  
19 behalf of the plaintiffs.

20 The court reporter is Judith  
21 Williams of G & M Court Reporters,  
22 Limited.

23 Counsel will now state their  
24 appearances and the court reporter will

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1 administer the oath.

2 MR. FITZPATRICK: Vincent  
3 Fitzpatrick of Dewey Ballantine for Empire  
4 Blue Cross/Blue Shield.

5 MS. McDEVITT: Heather McDevitt  
6 from Dewey Ballantine for Empire Blue  
7 Cross/Blue Shield.

8 MR. STOEVER: Tom Stoever of  
9 Arnold & Porter for Philip Morris  
10 Incorporated.

11 MR. GUILDS: Ron Guilds, also  
12 from Arnold & Porter, also for Philip  
13 Morris, Incorporated.

14 MR. MITCHELL: Tom Mitchell from  
15 Collier Shannon, also representing R. J.  
16 Reynolds.

17 - - -  
18 HARVEY M. SAPOLSKY, Ph.D., first  
19 having been duly sworn, testified as  
20 follows in answer to direct examination by  
21 MR. FITZPATRICK:

22 - - -

23 Q. Dr. Sapolsky, good morning. My name is  
24 Vincent Fitzpatrick. We have introduced

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1           ourselves for the record. I will be  
2           representing Empire Blue Cross and Blue  
3           Shield here today and asking you some  
4           questions about your expert testimony that  
5           you may give in this case. You understand  
6           that procedure?

7           A. I do.

8           Q. Could you please state your full name for  
9           the record, sir?

10          A. Harvey Morton Sapolsky.

11          Q. And you have issued several expert reports  
12          in this case? Is that correct?

13          A. Two. Yes.

14          Q. Let me actually ask you to identify the  
15          reports which we have previously marked as  
16          Sapolsky Exhibits 1, 2, and 3. I am  
17          handing you Exhibit 1 now.

18          A. Yes. That is one.

19          Q. Do you know which one? That is the first  
20          report?

21          A. That's correct.

22          Q. And that deals with such topics as the  
23          awareness of the Blue Cross/Blue Shield  
24          entities; right?

1 A. That's correct.

2 Q. And the differences or lack of differences  
3 between commercial insurance carriers and  
4 the Blues?

5 MR. STOEVER: I object to the  
6 form.

7 A. Yes. The answer was yes.

8 Q. And that is what we would refer to as your  
9 first report in this case?

10 A. That's correct.

11 Q. And I am showing you what has been marked  
12 as Sapolsky Exhibit 2, a report dated  
13 February 6, 2001. It is entitled  
14 Supplemental Report; right?

15 A. Yes.

16 Q. And is that the second report that you  
17 gave in this case?

18 A. That's correct.

19 Q. And that had to do with the issue of --  
20 well, it was in response largely to a  
21 report issued by Dr. Altman; is that  
22 right?

23 A. That's correct.

24 Q. Dealing primarily with alleged activities

1 by the tobacco industry to influence  
2 premiums by insurance companies?

3 MR. STOEVER: I would object to  
4 the form.

5 A. That's correct.

6 Q. And then finally, we have marked this as  
7 Sapolsky Exhibit 3. It is in somewhat  
8 informal form; that is, in the form of an  
9 e-mail, with a --

10 MR. FITZPATRICK: Well, actually  
11 I don't have to mark that, do I? That's a  
12 mistake.

13 We will take the actual report  
14 that counsel has provided me here today,  
15 and we'll mark this as Sapolsky  
16 Exhibit 3.

17 (Prior documents marked as  
18 exhibit no. 3 now withdrawn.)

19 (One-page Supplemental Statement  
20 of Harvey M. Sapolsky marked  
21 Exhibit No. 3 for  
22 identification.)

23 BY MR. FITZPATRICK:

24 Q. Could you identify that, sir?

1 A. Yes. That is the report I submitted.

2 Q. And that's the report that deals with the  
3 testimony you may give that relates to the  
4 individual subscriber depositions taken in  
5 this action?

6 A. Yes.

7 Q. Okay. I am going to refer to that as the  
8 - third report for ease of reference.

9 Dr. Sapolsky, have you ever  
10 testified before?

11 A. No.

12 Q. Welcome to the --

13 A. Yes. Thank you very much.

14 Q. -- experience.

15 A. Thank you very much.

16 Q. Could you describe to us briefly how you  
17 came to be retained as an expert in this  
18 case for the defendants?

19 A. I received a call from Arnold & Porter, an  
20 attorney at Arnold & Porter, in the summer  
21 of '99 asking whether I would be  
22 interested in learning more about a case  
23 that involved the Blue Cross plans and the  
24 tobacco companies, and I said I would.



1 Q. Had you previously had contact with the  
2 firm of Arnold & Porter?

3 A. Not that I recall.

4 Q. And did you have an understanding of the  
5 general subject matter that they wished  
6 you to testify to at that point?

7 A. It was described to me, and I think I had  
8 a general understanding.

9 Q. Okay. Can you tell us that as best you  
10 can recall?

11 A. I understood that the Blue Cross plans had  
12 made allegations about the behavior of the  
13 tobacco companies in trying to influence  
14 the behavior of the insurance companies,  
15 and that was my general understanding.

16 Q. Did there come a time when you were asked  
17 to analyze what the Blues knew about the  
18 health risks associated with tobacco use?

19 A. Yes.

20 Q. And was that at the -- was that at the  
21 same time as this initial?

22 A. Shortly thereafter, yes.

23 Q. And who did you meet with at Arnold &  
24 Porter?

1 A. Initially, Tom was one of the people.

2 (Pointing to Mr. Stoevers.)

3 A. I can't remember all the names of the  
4 particular individuals, but there were ---

5 Q. A number of attorneys?

6 A. There were several attorneys, but Tom was  
7 primarily the person that I dealt with.

8 Q. Okay. And have you met with any of the  
9 attorneys from any of the other law firms  
10 representing the defendants in this case?

11 A. Not that I recall.

12 Q. Have you discussed the substance of your  
13 testimony in this case with anyone other  
14 than attorneys from Arnold & Porter?

15 A. Do you mean other attorneys?

16 Q. Anyone else other than the attorneys at  
17 Arnold & Porter. I am excepting all  
18 attorneys at Arnold & Porter. Other than  
19 those folks, have you discussed your  
20 testimony with anyone else?

21 A. I work with a person named Sanford  
22 Weiner. We have had discussions.

23 Q. Who is Sanford Weiner?

24 A. He is a research associate at MIT who I

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1 have worked with for years.

2 Q. Did he assist you in some of the  
3 research --

4 A. Yes, he did.

5 Q. -- in what you were doing? Anybody else  
6 that you can recall?

7 A. Basically that's all I -- besides the  
8 attorneys involved, no.

9 Q. What did you do in preparation for --  
10 MR. FITZPATRICK: Strike that.

11 Q. What preparation did you do that  
12 culminated in what we have marked as  
13 Exhibit 1, your first report?

14 MR. STOEVER: I object to the  
15 form.

16 A. Reviewed a lot of Blue Cross documents  
17 from various Blue Cross plans; also the  
18 National Association Blue Cross and Blue  
19 Shield plans; also did some background  
20 reading on insurance and health policy  
21 relevant for this case.

22 Q. Did you speak to anyone at the Blue Cross  
23 Association?

24 A. No. Not directly.

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1 Q. Or indirectly in any fashion? Did you  
2 communicate with somebody at the  
3 association?

4 A. No.

5 Q. Did you speak with anybody at Empire Blue  
6 Cross?

7 A. In connection with this case?

8 Q. Yes.

9 A. No.

10 Q. Did you speak with anyone at any of the  
11 Blues, any other Blue, in connection with  
12 this case?

13 A. No.

14 Q. I take it from your inquiry that you have  
15 in the past -- I can see from the article  
16 you have written -- you have in the past  
17 been in contact with people from Empire;  
18 is that right?

19 A. That's correct.

20 Q. How long ago was that?

21 A. About 10 years ago.

22 Q. And during that contact, did the subject  
23 of what the people at Empire knew about  
24 tobacco-related disease come up?

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1 A. No.

2 Q. So on the subject of what anyone knew at  
3 Empire about cigarettes and health, you  
4 have not had any conversations at all with  
5 anybody employed by Empire?

6 A. That's correct.

7 Q. Did you review some of the depositions  
8 given by Empire employees in this case?

9 A. Yes, I did.

10 Q. Have you ever prior to your engagement in  
11 this matter reviewed depositions?

12 A. Yes, I have.

13 Q. Could you tell me the circumstances of  
14 that?

15 A. I have been involved as an expert witness,  
16 but not testified, in several other cases,  
17 but they are focused primarily on blood  
18 banking, where I have done some work as  
19 well.

20 Q. Did any of that work involve reviewing  
21 depositions to draw an inference from  
22 those depositions as to what the  
23 individuals whose depositions were taken  
24 knew or believed?

1 MR. STOEVER: Objection to the  
2 form.

3 A. Yes. I believe some of that did.

4 Q. Can you describe that for me?

5 A. Well, there were depositions of physicians  
6 and others involved in the blood banking  
7 cases that I was concerned with, and I  
8 reviewed their depositions.

9 Q. To see what they said on the subject?

10 A. Yes.

11 Q. I am asking -- and it is my fault for not  
12 being clear -- I am asking a slightly  
13 different question, I think. My question  
14 is did you ever as part of the expertise  
15 you were bringing to bear and the subject  
16 you were going to address in your expert  
17 testimony go about as part of that a  
18 review of a number of depositions in order  
19 to determine so that you could testify  
20 about what the people who gave those  
21 depositions knew or believed about any  
22 subject matter?

23 MR. STOEVER: Objection to the  
24 form.

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1 A. The answer is yes.

2 Q. And could you describe that for me?

3 A. There were testimonies of people involved  
4 in the policy-making process relating to  
5 blood banking that were relevant for that  
6 particular case, and I -- I didn't  
7 testify, as I said, but I did review in  
8 preparation for testimony.

9 Q. All right. And was it going to be part of  
10 your testimony as to what those people  
11 whose depositions you reviewed believed on  
12 any given subject?

13 MR. STOEVE: I object to the  
14 form.

15 A. I believe that was some -- some part of  
16 the case, yes.

17 Q. Have there been any other instances where  
18 you have done that?

19 A. No.

20 Q. How long ago was that?

21 A. These cases were in the late '80s, early  
22 '90s.

23 Q. This had to do with the blood supply and  
24 risk of AIDS? Is that the concern?

1 A. That's correct.

2 Q. Do you recall how many depositions you  
3 reviewed in that?

4 A. No, I don't recall.

5 Q. Can you give me a ballpark? 10, 20?

6 A. Oh, 10 would be the right number.

7 Q. Okay. How many depositions did you review  
8 roughly in preparation for the issuance of  
9 your first report?

10 A. I don't recall the exact number. It may  
11 have been eight to ten, something like  
12 that.

13 Q. How did you come to have those deposition  
14 transcripts?

15 A. I believe we requested them from the  
16 attorneys.

17 Q. Okay. Did you -- what was the nature of  
18 your request? Was it an open-ended  
19 request for all Empire depositions?

20 A. Relating to the work that I was doing,  
21 yes.

22 Q. Okay. So I'm clear, you indicated that  
23 you -- I am looking -- I don't want to put  
24 words in your mouth, but I would like a

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1 little more specific answer than that.

2 What to the best of your knowledge was the  
3 instruction you gave Arnold & Porter about  
4 the depositions you would like to review?

5 A. We -- we were interested in all documents,  
6 depositions, relating to the  
7 understanding, awareness of the Empire and  
8 - - other Blue Cross officials relating to the  
9 cigarette tobacco issue --

10 Q. Okay.

11 A. -- and how it impacted on them.

12 Q. And you relied upon Arnold & Porter to  
13 select those depositions and provide them  
14 to you?

15 MR. STOEVE: Objection to the  
16 form.

17 A. I believe we -- we were made aware of the  
18 names of the individuals, and then we  
19 asked for them. They supplied them  
20 certainly.

21 Q. And do you recall --

22 MR. FITZPATRICK: No. Strike  
23 that.

24 Q. Other than your work as a consultant in

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1 connection with the blood supply matter  
2 that you have talked about a little bit  
3 earlier and your work in this case, have  
4 you served as an expert consultant in any  
5 other litigation?

6 A. There were some other cases. There was an  
7 antitrust case relating to the blood  
8 banking business. It wasn't -- it was --  
9 it was definitely -- it was a different  
10 kind of case. It wasn't an individual  
11 liability case. It was an antitrust  
12 case. So I worked on that for a while.  
13 There were also some other risk-related  
14 cases. There was certainly an asbestos  
15 case that I was involved in for a while.

16 Q. Okay. Could you describe that?

17 A. Well, it was just my interest in  
18 understanding risk, and I was the --  
19 involved in trying to understand U. S.  
20 Government policy relating to asbestos.  
21 So I did some research for them and  
22 background. Again I didn't testify in any  
23 particular case.

24 Q. Okay. Okay. I am not sure you said. For

1           whom did you work in that?

2       A.   I can't recall the names of the attorneys.

3           I'm sorry.

4       Q.   I really meant what a company.  You may  
5           have just said it, and I missed it.  Do  
6           you recall who the ultimate party was?

7       A.   In that particular case, it was for the  
8           attorneys representing the asbestos  
9           industry.

10      Q.   Okay.  Any other work that you can recall  
11           along those lines?

12      A.   Legal work?

13      Q.   Yes.  I am asking whether -- I know you  
14           have had quite a prolific career.  I am  
15           trying not to cover any number of  
16           subjects.  All I am inquiring about is  
17           where you may have consulted in connection  
18           with litigation or legal disputes.

19      A.   That is essentially it.

20      Q.   Okay.  Have you done any work or consulted  
21           in any manner for the tobacco industry  
22           other than your engagement in this case?

23      A.   I did give a talk at a conference that  
24           Philip Morris sponsored, a one-day event.

1 That was my only connection as a,  
2 compensated connection with Philip  
3 Morris.

4 Q. And when did that happen?

5 A. '84, 1984-'85. I'm not quite sure of the  
6 year.

7 Q. What was the subject matter of that  
8 - conference?

9 A. There was a public affairs conference that  
10 Philip Morris sponsored for all its  
11 companies, and there were several  
12 speakers, and I was one of them.

13 Q. What topic did you cover?

14 A. I covered the research that I was doing in  
15 -- on product risk.

16 Q. Okay. Can you recall the substance of  
17 what you discussed?

18 A. Generally it was the conclusions that I  
19 had from the work that I was doing.

20 Q. Which are, if you can give them to me in  
21 broad terms?

22 A. Which are what?

23 Q. What are those conclusions from the work  
24 you were doing?

1 A. Of the work on?

2 Q. On risk.

3 A. It was the book that I did called

4 "Consuming Fears," and I talked about the

5 various influences institutions had on

6 people, public understanding of risk, and

7 the distortions that come about because of

8 the way people get their information.

9 Q. The book you just referred to is the book  
10 entitled "Consuming Fears, the Politics of  
11 Product Risk"?

12 A. That's correct.

13 Q. And I believe you indicated in the preface  
14 to that book that Philip Morris had  
15 provided some funding to MIT to support  
16 your work on that book?

17 A. That's correct.

18 Q. Do you recall how much they provided to  
19 MIT?

20 A. Roughly I believe \$300,000 over several  
21 years. I'm not absolutely sure of the  
22 figure.

23 Q. Do you have any expertise in the conduct  
24 of surveys?

1 A. I'm a political scientist, so I have to  
2 study pollings, and I have expertise in  
3 polling, yes.

4 Q. Advertising?

5 A. No.

6 Q. I would like you to --

7 MR. FITZPATRICK: Everybody has a  
8 - - copy of the report? I don't have to pass  
9 out extra copies, or do I?

10 MR. STOEVER: Actually if you  
11 have an extra copy, I would like to use  
12 one.

13 MR. FITZPATRICK: Let's see what  
14 we can do here. I have only really got  
15 one extra.

16 MR. STOEVER: That will be  
17 sufficient. Thank you.

18 (Handing documents to  
19 Mr. Stoever.)

20 BY MR. FITZPATRICK:

21 Q. If you would, Dr. Sapolsky, could you  
22 refer to what we have marked as Sapolsky  
23 Exhibit 1, which is your first report in  
24 this case, and I would like to ask you to

1 turn to the end of the report, page 38,  
2 the next to last page.

3 A. I have that page.

4 Q. I would like to direct your attention to  
5 conclusion 4, the last on the page, and  
6 take your time to read the full conclusion  
7 if you would like, but I am what I am  
8 going to ask you about is the last  
9 sentence that states, "The contest between  
10 the tobacco industry and the health  
11 industry, as Dr. James put it, has been  
12 going on for decades."

13 Do you see that language?

14 A. Yes, but let me finish the whole  
15 paragraph.

16 Q. Yes.

17 (Pause.)

18 (Witness examining documents.)

19 A. Yes.

20 Q. So you refer to the contest between the  
21 tobacco industry and the health industry.  
22 What do you mean by that?

23 MR. STOEVEER: I object to the  
24 form.

1 A. That the health industry, including the  
2 Blue Cross plans, were aware of the risks,  
3 early on of the risks of cigarette  
4 smoking, and they were distrustful of the  
5 statements, advertising efforts, whatever,  
6 of the tobacco industry, and that this was  
7 a strongly-held belief that continued on  
8 - through the years.

9 Q. Did you share that belief?

10 A. Share what belief?

11 Q. The belief you just referred to. What was  
12 the strongly-held belief?

13 A. That cigarettes were a health risk.

14 Q. And my question is have you shared that  
15 risk through the decades?

16 MR. STOEVE: Have you?

17 MR. FITZPATRICK: Strike it.

18 Strike it.

19 Q. You have been an expert in among other  
20 things public health for several decades  
21 now. Is that right?

22 A. Yes.

23 Q. And I think, therefore, in the broadest  
24 sense you would consider yourself a part



1 of the public health community? Is that  
2 right?

3 A. That's correct.

4 Q. Okay. And I'm asking as a member of the  
5 public health community did you share  
6 that, the concern?

7 A. Do I believe that, personal belief, that  
8 cigarettes are a health risk? Yes.

9 Q. Yes. And did you share the disbelief or  
10 distrust of the tobacco industry with  
11 respect to its positions on cigarette  
12 smoking and health?

13 MR. STOEVER: I object to the  
14 form.

15 A. You asked earlier about the conclusions of  
16 the book "Product Risks," and the  
17 conclusions of that book includes a  
18 statement that all institutions are --  
19 have an influence in distorting public  
20 perceptions on these kinds of issues. So  
21 certainly I would have. Yes.

22 Q. And do you believe that in fact the  
23 tobacco industry did distort the facts  
24 concerning the --

1 A. Well, it --

2 Q. -- true health risks posed by smoking?

3 MR. STOEVER: I object to the  
4 form.

5 A. In the work that I did on the cigarette  
6 industry, I am aware of attempts to shape  
7 the political environment of the  
8 - proponents and opponents to cigarette  
9 smoking. So yes. I mean in that sense,  
10 yes.

11 Q. Can you describe for us some of the steps  
12 taken by the tobacco industry that you are  
13 aware of?

14 A. Like the insurance industry, which I  
15 describe in these documents, they lobby.  
16 That is certainly one way. So it is the  
17 normal political process that I described  
18 in my work on cigarettes, yes.

19 Q. But the tobacco industry also made public  
20 statements on the subject of smoking and  
21 health?

22 MR. STOEVER: I object to the  
23 form.

24 A. Yes. I believe they did.

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1 Q. Okay. And do you consider their public  
2 statements on the subject of smoking and  
3 health as part of their attempt to  
4 influence the public's perception of the  
5 health risks associated with smoking?

6 MR. STOEVER: I object to the  
7 form.

8 A. I don't understand fully all their  
9 motives, but that certainly would be one  
10 of the possible ones, yes.

11 Q. I think you have already testified to  
12 this, but I want to make sure, that you  
13 yourself have distrusted the accuracy of  
14 some of those statements that they have  
15 made?

16 MR. STOEVER: I object to the  
17 form.

18 A. As I said, I believe that all institutions  
19 in the range that I described in the  
20 "Consuming Fears" book distort  
21 intentionally and unintentionally people's  
22 perception of risks.

23 Q. I understand that, and I am simply trying  
24 to be precise here. You believe

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1 specifically that the tobacco industry  
2 distorted information regarding the health  
3 risk of tobacco?

4 A. It would depend on a particular --

5 MR. STOEVER: I object to the  
6 form.

7 A. It would depend on the particular  
8 incident, effort. I, you know, as I said,  
9 it is something -- it is intentional or  
10 unintentional.

11 Q. Do you have any question sitting here  
12 today that the tobacco industry over the  
13 decades did in fact intentionally distort  
14 the record about the true health effects  
15 of smoking?

16 A. Yes, I do. I'm uncertain about lots of --  
17 I haven't examined all of their behavior.  
18 Yes.

19 Q. And when you talk about the contest  
20 between the tobacco industry and the  
21 health industry, can you tell me any more  
22 about what the tobacco industry did in  
23 that contest?

24 A. I am referring to the relationship between

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1 the industry, in this particular case the  
2 subpart, the Blue Cross plans, and the  
3 tobacco industry and an article that  
4 Dr. James wrote when he was involved with  
5 the Blue Cross plans.

6 Q. Well, does that contest take the form, for  
7 example, of the Blue Cross plans  
8 communicating that smoking causes disease  
9 and the tobacco companies communicating  
10 that there is a question as to whether it  
11 causes disease?

12 MR. STOEVER: I object to the  
13 form.

14 A. It would depend on what statement when,  
15 where. I mean it's -- that seems too  
16 general for me.

17 Q. Well, do you believe that that has been at  
18 least part of the contest, that tobacco  
19 has called into question whether in fact  
20 smoking causes disease while insurers such  
21 as Empire have informed their members that  
22 smoking does cause disease?

23 MR. STOEVER: I object to the  
24 form.

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1 A. Early on, there was questions about  
2 causation that various people had  
3 different views on, and the way of  
4 describing the behavior in industry  
5 depends on what year you're talking  
6 about.

7 Q. Well, let's say after the issuance of the  
8 - 1964 Surgeon General Report on smoking.

9 A. What about it?

10 MR. STOEVER: Is that --

11 Q. Do you believe that since that time, since  
12 that time, part of this contest that you  
13 are referring to between the tobacco  
14 industry and the health industry is that  
15 the health industry, including Empire,  
16 would inform the public that smoking  
17 causes diseases, such as cancer, and the  
18 tobacco industry would call into question  
19 whether in fact tobacco causes diseases?

20 MR. STOEVER: I object to the  
21 form.

22 A. I think the interest in dealing with the  
23 health issue on the part of tobacco  
24 companies changed over time, and that

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1 bringing out discussions about the health  
2 effects of cigarettes would probably not  
3 be their prime focus after the Surgeon  
4 General's Report. It depends on the years  
5 and when the --

6 Q. Have you made any study of that to see  
7 what the --

8 A. Only in relationship to articles that I  
9 wrote early on on the industry. I haven't  
10 studied the industry recently.

11 Q. Okay.

12 MR. FITZPATRICK: Could we turn  
13 to that article for a moment? I have the  
14 book. I am going to mark for convenience  
15 sake.

16 We are up to Sapolsky Exhibit 4.  
17 I would like to mark the preface of the  
18 book entitled "Consuming Fears, The  
19 Politics of Product Risks," which was  
20 copied from that book, as Sapolsky  
21 Exhibit 4.

22 (Three-page photocopy from book  
23 entitled "Consuming Fears, The  
24 Politics of Product Risks"

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1 marked Exhibit No. 4 for  
2 identification.)

3 MR. FITZPATRICK: And as Sapolsky  
4 Exhibit 5, Chapter 1 of the book.

5 (Chapter 1 of book  
6 entitled "Consuming Fears, The  
7 Politics of Product Risks"  
8 marked Exhibit No. 5  
9 for identification.)

10 MR. FITZPATRICK: And as Sapolsky  
11 Exhibit 6, chapter 2 of the book.

12 (Chapter 2 of book  
13 entitled "Consuming Fears, The  
14 Politics of Product Risks"  
15 marked Exhibit No. 6  
16 for identification.)

17 BY MR. FITZPATRICK:

18 Q. What I would like to refer you to, sir,  
19 are pages 16 and 17 of Sapolsky Exhibit 4,  
20 that is the introduction to your book.

21 Let me first --

22 A. I am sorry?

23 Q. I am sorry. 5. It is Sapolsky Exhibit 5.

24 A. Right.

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1 Q. Perhaps you could for the record identify  
2 that for us.

3 A. But give me the pages again, please?

4 Q. Okay. Right. I have got it. 16 and 17.

5 A. And this is Exhibit 5?

6 Q. Right. Okay. If you could just identify  
7 for us what -- confirm, you can confirm,  
8 - can you not, sir, that this is a copy of  
9 the first chapter of your book?

10 A. That's correct.

11 Q. And take your time, but I would like to  
12 call your attention to page 16 and 17, and  
13 specifically to the last sentence  
14 beginning on page 16 that states, it is  
15 the second line up from the bottom,  
16 "Attempts by industry to defuse product  
17 controversies and adjust marketing  
18 strategies to assuage health concerns are  
19 strikingly visible in the cigarette case."

20 Do you see that?

21 A. That's correct.

22 Q. What were you referring to when you wrote  
23 that sentence?

24 A. The politics that I described in the

1 previous part of the paper.

2 Q. Which particular strategy?

3 A. Oh, I am sorry. This is the  
4 introduction?

5 Q. Yes.

6 A. I am referring to my own chapter, which  
7 comes after this, but I am referring to  
8 the politics I describe there.

9 Q. Can you tell me which particular attempts  
10 by industry to defuse product  
11 controversies were strikingly visible in  
12 the cigarette case?

13 A. Well, there were lots of issues described  
14 in the next chapter, which include  
15 attempts to label packages and restrict  
16 advertising and other aspects of the  
17 controversy over cigarette smoking.

18 Q. And you go on to state on page 17, "And  
19 yet, there are unique features of this  
20 controversy."

21 Can you recall what you --

22 A. Where is that?

23 Q. I am sorry. It is the next sentence after  
24 the one we just read --

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1 A. Okay.

2 Q. -- at the top of page 17, "And yet, there  
3 are unique features of this controversy"?

4 A. That's correct.

5 Q. Could you tell us what you're referring to  
6 there?

7 A. The sentence right after that helps put it  
8 in context: "No other product has such  
9 committed opponents as does the  
10 cigarette."

11 Q. And the following sentence states, "And no  
12 other set of producers have weathered  
13 their travails as successfully as have the  
14 cigarette producers."

15 A. That's correct.

16 Q. What did you mean by that?

17 A. As I described in the chapter that comes  
18 after this, the sales of tobacco products  
19 held up reasonably well given the  
20 challenges that were facing the industry.

21 Q. And did you reach a conclusion as to why  
22 that happened, why those sales held up?

23 A. I did in the next chapter.

24 Q. You can refer to the chapter, if you would

1           like. It is Chapter 6. Can you indicate  
2           to us why?

3       A. I believe I cite several reasons why.

4           First, I mentioned a number of existing  
5           smokers, so you are dealing with a product  
6           that has wide popularity, wide support by  
7           -- well, wide popularity, and people are  
8           willing to defend their use of it. There  
9           is the tobacco industry -- the farming  
10          industry that I mention. There is the  
11          position of the companies. And there are  
12          governments who are taxing and living to  
13          some extent off the industry. So there is  
14          a variety, a wide variety of support for  
15          the industry.

16       Q. And what positions of the companies were  
17       you referring to?

18       A. Well, let's see. Can I refer to the text?

19       Q. Oh, certainly, certainly.

20       A. By providing brands that have appeal to  
21       people.

22       Q. A brand such as low tar brands?

23       A. That's correct. Different products for  
24       different segments of the market.

1 Q. Advertising?

2 MR. STOEVER: I am sorry. Is  
3 that a question?

4 MR. FITZPATRICK: Yes.

5 MR. STOEVER: Okay. I object to  
6 the form.

7 A. It depends. Advertising these different  
8 products? Yes.

9 Q. Any other things you can think of about  
10 the actions by the tobacco industry?

11 A. Development of foreign markets.

12 Q. If you could turn to page 23.

13 A. This is still -- this is 23, which would  
14 be in Chapter 2?

15 Q. Exhibit 6, yes. Chapter 2, Exhibit 6.

16 A. Okay.

17 (Witness complying.)

18 Q. Again I would like to call your attention  
19 to the last sentence on page 23, "The less  
20 favorably smoking is viewed, the fewer new  
21 smokers are likely to be recruited."

22 Do you see that, sir?

23 A. Yes.

24 Q. When you wrote that, what did you mean?

1 A. I meant the what was said previously in  
2 the paragraph about the development of  
3 negative attitudes towards tobacco, and I  
4 believe at this time also I'm describing  
5 or it describes previously the attempts to  
6 isolate the smoker.

7 Q. Is it fair to say that your conclusion was  
8 to the extent that smoking attained a  
9 negative image that that would lead to  
10 fewer smokers?

11 MR. STOEVEER: I object to the  
12 form.

13 A. I believe that was a general conclusion of  
14 others who looked at the way people look  
15 at this industry as well, so I was  
16 reporting generally what I thought was  
17 happening, yes.

18 Q. And it is true, isn't it, that the -- and  
19 your work revealed -- that the tobacco  
20 industry among other things tried to avoid  
21 through advertising and otherwise its  
22 products attaining that negative image?

23 MR. STOEVEER: I object to the  
24 form.

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1 A. To the extent -- their ability to do that  
2 would be very limited, I think, because  
3 there were so many other things going on.

4 Yes.

5 Q. Okay. But my question is did they, as  
6 part of the contest that you referred to  
7 between the tobacco industry and the  
8 health industry, among other things, it is  
9 true that the tobacco industry tried to  
10 assuage fears and avoid having their  
11 products require a negative image?

12 MR. STOEVER: I object to the  
13 form.

14 A. I think they tried to make a case for the  
15 product and to some extent defend the  
16 people who used their product.

17 Q. And in doing that, they attempted to  
18 assuage the fears of people in general  
19 about risks of smoking?

20 MR. STOEVER: I object to the  
21 form.

22 Q. Is that right?

23 A. It depends on particular behaviors. I'm  
24 not sure what you're referring to as --

1 Q. I am asking in general.

2 A. In general?

3 Q. You looked at the area. In general, that  
4 was one of the -- one of the things that  
5 they did, was it not?

6 A. Well, all institutions, I have argued, try  
7 to shake their environment, and that would  
8 be their environment, yes.

9 Q. Okay. Let's go back, if we could, to  
10 Exhibit 1, which is your report, and --

11 A. Exhibit 1?

12 Q. Yes.

13 A. My report in this case?

14 Q. Right. On the second page, the last  
15 paragraph on the page, I want you to -- I  
16 would call your attention to the following  
17 statement, "The opinions expressed in this  
18 report are based on my academic training,  
19 my years of research and teaching about  
20 healthcare, my knowledge of health  
21 insurance and healthcare organizations, my  
22 work on risk," and a couple of other  
23 things?

24 A. That's correct.

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1 Q. And I know you referred to -- you have  
2 been referring and you have been  
3 testifying about your work on risk. Could  
4 you describe to me a little more fully  
5 what your -- what you have done in your  
6 career --

7 MR. FITZPATRICK: Strike that.

8 Q. What were you referring to here when you  
9 stated that your opinions were based in  
10 part on your work on risk?

11 A. Well, I certainly was referring to the  
12 book that you have put into exhibit, so  
13 the book I did on "Consuming Fears." But  
14 I have done previous work relating to risk  
15 when I first began my career. I worked on  
16 fluoridation. I have written articles on  
17 fluoridation. I have been involved in  
18 National Academy committees that looked at  
19 risk issues. I did some work, as I  
20 mentioned, on blood banking that was a  
21 risk-related issue. I did some work on  
22 asbestos that was a risk-related issue. I  
23 worked on several other environmental risk  
24 issues after I finished the "Consuming

1 Fears."

2 Q. And I believe -- and I am paraphrasing  
3 based on my own reading of your works --  
4 that you have come to the conclusion that  
5 there tends to be among the American  
6 public a good deal of misinformation about  
7 the actual risks posed by any number of  
8 products that are described as being  
9 harmful?

10 MR. STOEVE: I object to the  
11 form.

12 A. I wouldn't say misinformation.

13 Q. How would you describe it?

14 A. I would say confusion.

15 Q. And what type of confusion are you  
16 referring to?

17 A. As the "Consuming Fears" book concludes,  
18 big risks are made bigger, and little  
19 risks are made big as well, so people  
20 confuse the relative risks.

21 Q. And the --

22 MR. FITZPATRICK: Strike that.

23 Q. It is common, isn't it, for people to have  
24 an exaggerated view of what are really

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1 quite minor risks?

2 A. What do you mean by minor risks? I'm not  
3 sure what you mean.

4 Q. Well, you worked -- I think you indicated  
5 that you had done some work with respect  
6 to urea-formaldehyde foam insulation?

7 A. Yes.

8 Q. Let's take that as an example.

9 A. Yes.

10 Q. That was a controversy going on back in  
11 the '80s?

12 A. That's correct.

13 Q. Were you involved in any way in studying  
14 that controversy?

15 A. I had associates that looked at it, yes.  
16 It is in the book.

17 Q. Yes. That's -- I noticed it. And did you  
18 come to a conclusion as to what the  
19 relative risk of formaldehyde insulation  
20 was to humans' risk?

21 A. Well --

22 Q. To human health?

23 A. I relied on the expressions of risk by  
24 experts in these fields, so my belief is

1           that these people say that's a relatively  
2           minor risk.

3       Q.   Okay.  Do you recall studies indicating  
4           that perhaps exposure to formaldehyde  
5           insulation to result in one additional  
6           cancer out of 10,000 people?

7       A.   I don't recall, and I did not write that  
8           -- that chapter, so.

9       Q.   Okay.

10      A.   I -- my knowledge, you know, of the  
11           specifics is depending on 18, you know,  
12           17, 18 years of time since then.

13      Q.   Okay.  Do you have any recollection as an  
14           approximation of what the magnitude of the  
15           risk that was associated with --

16      A.   No, I don't.  I would have to refer to a  
17           list.

18      Q.   Well, do you believe that the American  
19           people in general have an accurate  
20           understanding of the relative risks posed  
21           by the various substances that they are  
22           told from time to time are harmful?

23                           MR. STOEVE:  I object to the  
24           form.

1 A. I believe they are confused about the  
2 relative risk, yes.

3 Q. All right. If we can, another subject,  
4 look at your report, your first report,  
5 the first page.

6 MR. FITZPATRICK: No. Strike  
7 that. I am sorry. I am referring you to  
8 the wrong thing. I would like to mark the  
9 Altman report.

10 I would like to mark the expert  
11 report of Stuart H. Altman, which I will  
12 refer to as the first Altman report, dated  
13 November 15, 1999 as Exhibit 7.

14 (Expert report of Stuart H.  
15 Altman, Ph.D. marked Exhibit  
16 No. 7 for identification.)  
17 (Handing documents to  
18 Mr. Stoever.)

19 MR. STOEVER: Thank you, sir.

20 MR. FITZPATRICK: Let's mark the  
21 supplemental Altman report dated June of  
22 2000 as Sapolsky Exhibit 8.

23 (Expert Report of Stuart H.  
24 Altman, Ph.D. marked Exhibit

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1 No. 8 for identification.)

2 (Handing documents to

3 Mr. Stoever.)

4 MR. STOEVER: Thank you, sir.

5 BY MR. FITZPATRICK:

6 Q. Have you previously had a chance to review  
7 Professor Altman's reports?

8 A. Yes.

9 Q. Okay. And you know Dr. Altman; is that  
10 correct?

11 A. Yes, I do.

12 Q. And you in fact collaborated, I think you  
13 mentioned earlier, you and he co-authored  
14 a book?

15 A. Co-edited a book.

16 Q. Co-edited a book. And do you consider him  
17 a qualified professional and an expert in  
18 the area of public health policy?

19 A. Yes, I do.

20 MR. STOEVER: I would object to  
21 the form.

22 Q. I would like to -- and I understand that  
23 you have got some disagreements with  
24 Dr. Altman relating to this case, but I

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1 would like to explore whether there are  
2 some areas of agreement with him. And  
3 specifically, if you would take a look at  
4 page 5.

5 A. Of what exhibit?

6 Q. Of Exhibit 7, being the first Altman  
7 report.

8 A. (Witness complying.)

9 Q. I want to call your attention to the first  
10 full sentence on page 5 that states that  
11 "The United States healthcare financing  
12 system must meet the objectives of  
13 providing financial protection for those  
14 it insures, paying adequate rates to the  
15 doctors, hospitals and others that provide  
16 healthcare, and do so at premium levels  
17 which employers, government and  
18 individuals can afford."

19 Do you see that?

20 A. Yes, I do.

21 Q. Would you agree with that?

22 A. That is a very general statement. Yes. I  
23 sort of generally would agree with it.

24 Q. Would you agree with the next sentence

1 that "Meeting these often conflicting  
2 objectives has posed and continues to pose  
3 a major challenge"?

4 A. In the most general sense, yes.

5 Q. Tell me if you agree with this: That the  
6 major problem reflected in that statement  
7 is that the healthcare industry and health  
8 insurers have to provide quality  
9 healthcare but do it at a price that is  
10 affordable. Simply stated, is that a  
11 fact?

12 MR. STOEVER: I object to the  
13 form.

14 A. I think it is more complicated than that,  
15 so I -- I don't agree with that  
16 formulation.

17 Q. All right. Would you agree that any  
18 health insurer has to deal regularly with  
19 the practical struggle of financing  
20 adequate healthcare but doing it at a  
21 reasonable cost?

22 A. No. I think it is more complicated than  
23 that. I think there are many -- it  
24 depends on what year, what kind of



1 insurance company. There are lots of  
2 qualifiers that aren't present in that  
3 statement.

4 Q. Is that a problem in general for the  
5 insurance industry, without regard to  
6 particular --

7 A. It depends on the year. The insurance  
8 - industry has changed. I have written an  
9 article on Blue Cross that describes some  
10 of the changes that have occurred in the  
11 industry, so.

12 Q. Has the --

13 A. It seems to me that it depends on what  
14 year, what firm.

15 Q. Well, let's just take the last decade, the  
16 1990s. A major problem faced by  
17 healthcare providers and by health  
18 insurers was continuing to make quality  
19 healthcare affordable, make quality  
20 healthcare available, but doing it at a  
21 price that is affordable?

22 MR. STOEVER: I object to the  
23 form.

24 A. It is too vague. I don't -- what is

1 affordable? You know, what is quality?  
2 So it's -- those are -- that is too vague  
3 a formulation for me.

4 Q. Well, you would agree that healthcare  
5 costs have risen dramatically over the  
6 last 20 years?

7 A. It is actually a longer period that they  
8 have risen, yes.

9 Q. Okay. And there has been a major effort  
10 by any number of institutions, including  
11 the government, including health insurers,  
12 to try to control or retard that increase  
13 in healthcare costs?

14 MR. STOEVER: I object to the  
15 form.

16 A. Again I would say that it depends on the  
17 specific actions, because there have been  
18 lots of actions, but they may or may not  
19 have had the character -- they may or may  
20 not be characterized the way you  
21 characterize them. I'm not sure.

22 Q. Have there been steps taken to try to keep  
23 the costs down?

24 MR. STOEVER: I object to the

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1 form.

2 A. In that most general sense, yes.

3 Q. And would you consider that to be a  
4 necessary objective of public health  
5 policy in general?

6 MR. STOEVER: I object to the  
7 form.

8 A. One of many objectives of the public  
9 health policy in general, and that's part  
10 of the problem about health policy,  
11 because these are conflicting goals.

12 Q. Yes. And what are those conflicting  
13 goals?

14 A. Well, you have described a couple of them  
15 yourself. One is access; one is quality;  
16 and one is cost. And the mix among them  
17 varies over time.

18 MR. FITZPATRICK: Let's mark the  
19 article you referred to about your article  
20 on "Empire and the Business of Health  
21 Insurance" --

22 THE WITNESS: Yes.

23 MR. FITZPATRICK: -- as Sapolsky  
24 Exhibit 9.

(Article entitled "Empire and the  
Business of Health Insurance"  
marked Exhibit No. 9 for  
identification.)

BY MR. FITZPATRICK:

Q. Actually, before I ask you a question  
about that, let me ask you to refer again  
to your own report.

A. The first or the supplement?

Q. The first report.

A. (Witness complying.)

Q. I want to refer you to page 3, and in the  
second paragraph on that page, you state  
that, "Despite all of these changes" --  
referring to the prior paragraph -- "Blue  
Cross and Blue Shield plans have remained  
important, powerful, and informed actors  
in the American healthcare system."

Do you see that, sir?

A. Yes.

Q. In what way are the Blue Cross and Blue  
Shield plans important and powerful actors  
in the American healthcare system?

A. Well, they represent a significant share

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1 of the insurance business, and they  
2 represent initially a social movement of  
3 one kind. They represented many of the  
4 providers of healthcare.

5 Q. Do they still have those attributes?

6 A. Well, the business has changed a lot in  
7 recent years, but they are still very  
8 important institutions, yes.

9 Q. And they still have cross ties with  
10 providers?

11 A. No. ~~Not~~ as much as they had before.

12 Q. Let me then refer you to your Empire  
13 article, which we have marked as  
14 Exhibit 9.

15 A. (Witness complying.)

16 Q. And the same theme I think is echoed at  
17 page 751. That is what I am going to ask  
18 you about.

19 A. Okay.

20 Q. Okay. If we go to page 751 of Exhibit 9,  
21 and the second full paragraph on that page  
22 refers to, "The close ties Blue Cross and  
23 Blue Shield had with providers...."

24 Do you see that?

1 A. Yes.

2 Q. What are you referring to there?

3 A. I was referring specifically to the  
4 memberships, the sponsorship of these  
5 organizations by provider organizations  
6 initially, and the overlapping boards  
7 described in the next sentence.

8 Q. If you refer to page 753 of the same  
9 article --

10 A. (Witness complying.)

11 Q. -- this is a little trickier to find, but  
12 referring to the second paragraph on 753,  
13 approximately 10 lines up from the bottom,  
14 there is a statement that reads, "It was  
15 useful also to have around plans with  
16 well-established ties to providers to help  
17 determine the rules for dealing with the  
18 powerful professions that existed in  
19 healthcare."

20 Do you see that?

21 A. Yes.

22 Q. What were you referring to in that  
23 sentence?

24 A. I was referring to the insurance industry.

1 The private insurance companies welcomed  
2 the idea that there would be organizations  
3 like Blue Cross so that their  
4 relationships with the profession, the  
5 medical profession and other health  
6 professions, would be softened to some  
7 extent.

8 Q. And how did Blue Cross help determine the  
9 rules for dealing with the powerful  
10 professions?

11 A. Well, to the extent that Blue Cross tried  
12 to monitor the behavior of physicians or  
13 the prices charged by physicians, tried to  
14 influence them in any way, this would be a  
15 guide to the other firms in the industry.

16 Q. And that was a role pioneered by Blue  
17 Cross?

18 MR. STOEVE: I object to the  
19 form.

20 A. I'm -- I'm ascribing that role to them.  
21 It's -- it's my belief that that was part  
22 of the function they played in the  
23 industry.

24 Q. All right. And to some extent, they

1 continue to play that role; right?

2 A. It has declined over the years.

3 Q. Yes. Excepting that it has waned over the  
4 years, but it still exists to some degree?

5 A. I'm not sure quite what it is right now.  
6 It certainly was when I was describing it  
7 then (pointing to Exhibit No. 9).

8 Q. Okay.

9 A. I have not studied the relationship of  
10 Blue Cross plans to other insurance in  
11 recent years.

12 Q. Okay. Have you studied the relationship  
13 of Blue Cross plans to providers in recent  
14 years?

15 A. No, not since this article.

16 Q. Okay.

17 MR. STOEVE: Would this be a  
18 good time to take a break?

19 MR. FITZPATRICK: Yes. It would  
20 be an excellent time.

21 THE VIDEOGRAPHER: The time is  
22 10:50 a.m. We are off the record.

23 (A recess was then taken.)

24 THE VIDEOGRAPHER: The time is



1 11:08 a.m. We are on the record.

2 BY MR. FITZPATRICK:

3 Q. I understand from Mr. Stoeever that you  
4 would like to add something to one of your  
5 previous answers.

6 A. Yes. I believe you asked a question about  
7 my involvement in litigation.

8 Q. Yes.

9 A. And being an expert witness and in either  
10 tobacco cases or others. I omitted  
11 unintentionally one case, which is a  
12 fairly recent one. It was a tobacco case  
13 that is at -- in the state of California.  
14 It is an environmental tobacco case that  
15 has been settled. I was asked by  
16 attorneys representing the defendants to  
17 be involved in that case. I never  
18 prepared a report. I didn't have a  
19 deposition. And I eventually withdrew the  
20 case before it was settled, withdrew from  
21 the case, because my work wasn't relevant  
22 to what I think they were interested in.

23 Q. This would be what we colloquially refer  
24 to as a passive smoking case?

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1 A. Yes. I call it environmental tobacco  
2 smoke, but that is right.

3 Q. ETS?

4 A. But it was a business law case in  
5 California. It was confusing to me. I'm  
6 not a lawyer. But --

7 Q. A lot of these cases are confusing to all  
8 of us.

9 (Laughter.)

10 A. But it wasn't a case directly about  
11 passive smoking. It was about the  
12 expressions of the tobacco company on that  
13 issue under California law, which I don't  
14 know much about.

15 Q. And can you describe for me briefly what  
16 was the nature of the work that you were  
17 doing in that case?

18 A. I was interested in government policy  
19 regulating environmental tobacco smoke. I  
20 would have done more research or worked on  
21 that topic.

22 Q. Okay. Thank you.

23 Before we return to your report,  
24 if I could ask you one more question on

1 the Empire article, which I believe is  
2 Exhibit 9, page 748.

3 The second full paragraph, the  
4 second sentence, states, "Empire Blue  
5 Cross and Blue Shield pioneered many of  
6 the arrangements that now constitute the  
7 standard practices of private health  
8 insurance in the United States."

9 What arrangements were you  
10 referring to there, sir?

11 A. I meant it in the most general way, I  
12 believe. I was just talking about the  
13 fact that they were one of the earlier  
14 insurance organizations and that the  
15 things that they did to develop the  
16 industry helped shape the industry over  
17 the years. There wasn't a -- it wasn't  
18 very specific.

19 Q. You referred earlier to the fact that the  
20 Blues had a social mission. Can you give  
21 us your understanding of what that social  
22 mission was?

23 A. Well, it wasn't always clear, but it was  
24 to help expand the insurance opportunities

1 for individuals.

2 Q. Do you believe that Empire still does or  
3 does not continue to have that social  
4 mission?

5 A. I think that rather quickly they became  
6 rather a fairly conventional insurance  
7 organization, like many others.

8 Q. All right.

9 A. They lost this social --

10 Q. When do you think that occurred?

11 A. It was gradual, but early on where they  
12 competed with private insurance companies  
13 and took on many of the characteristics of  
14 those companies.

15 Q. And you talked about a number of those  
16 changes in your report. Is it fair to say  
17 that in many instances to the extent that  
18 Empire took on the characteristics of  
19 commercial insurance companies they did so  
20 to survive in the marketplace?

21 MR. STOEVE: I object to the  
22 form.

23 THE WITNESS: Yes.

24 A. I'm not sure what all the motivations

1 were.

2 Q. Your own study reveals, does it not, that  
3 at least one of their motivations was that  
4 they were faced with competition from the  
5 commercial insurers and they needed to  
6 respond to that competition to remain  
7 financially sound?

8 A. They certainly adopted the business  
9 practices that the private insurance  
10 companies were using at early on, yes.

11 Q. Well, my question is isn't it a fact that  
12 the market in effect required them to do  
13 that?

14 A. In large part, they were responding to the  
15 market, I believe.

16 Q. Okay. Now if we can go to page 34. It is  
17 still on the same subject, page 34 of  
18 Exhibit 1, your first report, and looking  
19 at the first sentence of the first full  
20 paragraph it states, "Year by year during  
21 the 1980s, Blue Cross and Blue Shield  
22 plans grew more like their commercial  
23 rivals."

24 Can you be any more precise than

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1 that as to what manner and when during the  
2 1980s the Blues grew more like their  
3 commercial rivals?

4 A. First you have to recognize as stated in  
5 the report as well that they lost their  
6 ties with the providers in the format that  
7 they had been born, so that they were not  
8 part of the hospital association or the  
9 medical societies as they, the Blue plans,  
10 were in the previous decades. So that  
11 would be where you would start.

12 Q. Can you recall any others during that  
13 period of time, any other changes during  
14 that period of time?

15 A. Well, I don't recall any specifics, but if  
16 you examined the regulatory environments  
17 in the various states, these plans  
18 operated in different states, and the  
19 different regulatory environments would  
20 treat them differently over the time.  
21 Yes.

22 Q. So this process of becoming more like the  
23 commercials continued through the '80s and  
24 into the '90s?

1 A. I believe that's correct, yes.

2 Q. And your next sentence is that "In the  
3 1990s, the distinction faded away  
4 altogether."

5 Could you tell me with any more  
6 precision than that the time when you  
7 believe the distinction between Empire and  
8 - commercial insurers faded away  
9 altogether?

10 A. Empire was the largest of these  
11 organizations. It had a different  
12 regulatory environment than most of the  
13 others, and it stayed tied to certain  
14 older practices longer than others, but  
15 they were trying to go commercial, become  
16 a commercial company, in the '90s, so I  
17 mean they were petitioning to be free from  
18 their restrictions.

19 Q. And my question -- and I know it is hard  
20 to give it -- would you say that today  
21 that the distinction between Empire and  
22 commercial insurers has faded away  
23 altogether?

24 A. I believe it has. Yes.

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1 Q. And you don't believe that there remain  
2 any vestiges of the distinction between  
3 Empire and the commercial insurers that  
4 existed in the past?

5 MR. STOEVE: I object to the  
6 form.

7 A. I'm not sure I know all the current  
8 - - arrangements. You are asking about today,  
9 and I don't know what all the current  
10 arrangements are in New York State  
11 relating to Empire.

12 Q. Is there -- do you have any particular  
13 date in mind in the 1990s when you think  
14 that all or substantially all of the  
15 distinctions between Empire and commercial  
16 carriers faded away altogether?

17 MR. STOEVE: I object to the  
18 form.

19 A. A particular -- I am sorry -- what would  
20 you mean by a particular date?

21 Q. Well, you are using the general term "in  
22 the 1990s," and I know this may be  
23 difficult, but I am trying to get a more  
24 precise time period if possible.



1 A. I wouldn't be able to give you a precise  
2 date.

3 Q. If I suggested to you that at least  
4 through 1997 there were substantial  
5 distinctions between Empire and commercial  
6 carriers in New York State, would you  
7 agree with that?

8 MR. STOEVE: I object to the  
9 form.

10 A. What would you mean by "substantial"?

11 Q. Well, let me put it another way. Can you  
12 testify that as of 1997 there were not  
13 remaining distinctions between Empire and  
14 commercial carriers in New York State?

15 MR. STOEVE: I object to the  
16 form.

17 A. It would depend, I believe, on the  
18 specific behaviors or actions or  
19 situations. I'm not quite sure what you  
20 mean.

21 Q. Well, I'm just asking if you know of -- if  
22 you could, sitting here today, testify  
23 that there were no such distinctions as of  
24 1997.

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1 A. I -- I don't think I can answer the  
2 question clearly. I mean I don't know. I  
3 don't know.

4 Q. Okay. Now I think that you have -- I '  
5 think your opinion has indicated that the  
6 Blues became more like commercials, and my  
7 question is is part of that process that  
8 the commercials became more like the  
9 Blues?

10 A. I don't think so.

11 Q. The Blues served as an and Empire served  
12 as an insurer of last resort for many  
13 years; is that correct?

14 A. They had that role, yes.

15 Q. And Empire still has the role of insurer  
16 of last resort?

17 A. Right -- well, I don't know. It depends  
18 what you mean by "insurer of last  
19 resort." It depends on what the  
20 regulations, rules are in New York State  
21 at the present time, and I don't know.

22 Q. Well, do you have a belief as to whether  
23 Empire is different from or the same as  
24 commercial insurers with respect to acting

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1 as an insurer of last resort?

2 A. I don't know.

3 Q. Are you familiar with the operation of  
4 labor union health and welfare funds?

5 A. Just generally.

6 Q. All right. Can you tell us generally what  
you do know about them?

7 A. I -- that's too general. I mean I -- I --

8 Q. All right. They are -- let me ask if you  
9 would agree with this statement -- that  
10 they are welfare funds established  
11 pursuant to the Taft-Hartley Act?

12 A. I'm not sure. I -- I know that that may  
13 be their origin, but I don't know --

14 Q. Okay.

15 A. -- what you -- you know, what their status  
16 would be today.

17 Q. Do you know how they -- they do finance  
18 their members' healthcare; am I correct in  
19 that?

20 A. There are some plans that do that, yes.

21 Q. Okay. And would you say that in that  
22 regard in their operations in acting as a  
23 third-party payer of healthcare costs are  
24

1           they indistinguishable from Empire?

2                       MR. STOEVER: I object to the  
3           form.

4   A. I don't know.

5   Q. Are they indistinguishable from commercial  
6       carriers?

7   A. I don't know.

8 - Q. If we can refer to what we have marked as  
9       Sapolsky Exhibit 3.

10   A. 3?

11   Q. Yes.

12   A. 3?

13   Q. You have got it.

14   A. It's the one page?

15   Q. Right, right. And I am going to refer you  
16       to the following statement, "I have  
17       reviewed the expert report submitted by  
18       Professor Richard Semenik and the  
19       statistical analysis of the subscriber  
20       depositions taken in this action. In my  
21       view Professor Semenik's report and the  
22       statistical analysis support my opinion  
23       that the knowledge of the health risks of  
24       smoking, including its addictive nature,

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1 was widespread."

2 Do you see that, sir?

3 A. Yes, I do.

4 Q. As best you can tell me, how is that  
5 relevant -- in what way does it support  
6 the opinion that you are intending to give  
7 in this case at trial?

8 A. That the knowledge among Empire  
9 subscribers and the general public was  
10 widespread about the health risk of  
11 smoking.

12 Q. Okay. So let me see if I am clear on  
13 this. You do intend to opine not only on  
14 the awareness of smoking health risks of  
15 Empire but of the awareness of health  
16 risks of Empire members?

17 MR. STOEVE: I object to the  
18 form.

19 Q. Is that right?

20 A. Most -- I -- I do know of the public  
21 awareness about cigarette smoking, and  
22 that would include the awareness of Empire  
23 subscribers.

24 MR. FITZPATRICK: Well, this is a

1 matter for counsel, but I'm not sure that  
2 has been -- Tom, I am going to ask you.  
3 Do you intend to ask Professor Sapolsky to  
4 testify about the awareness of  
5 individuals, whether Empire subscribers or  
6 others, as opposed to the awareness of  
7 Empire itself?

8 MR. STOEVER: When you say  
9 "individuals," do you mean specific  
10 individuals?

11 MR. FITZPATRICK: No, no. I mean  
12 smokers, smokers who happen to be Blue  
13 Cross Empire members or smokers in the  
14 general population.

15 MR. STOEVER: Well, Professor  
16 Sapolsky's report includes statements  
17 about public awareness of cigarette  
18 smoking and the health hazards of  
19 cigarette smoking, and I think that to the  
20 extent that that is a subject discussed in  
21 his report, that we will, or may, ask him  
22 to testify regarding the subject matters  
23 of his report at trial.

24 MR. FITZPATRICK: Okay. I am --

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1 I didn't -- I am being a little more  
2 precise than that. I am trying to be  
3 anyway.

4 MR. STOEVER: Okay.

5 MR. FITZPATRICK: Which is  
6 whether he, Dr. Sapolsky, is going to  
7 testify as to the awareness of Blue Cross  
8 or Empire subscribers based on his review  
9 of the individual depositions or of the  
10 Semenik report.

11 MR. STOEVER: Professor  
12 Sapolsky's work includes, his report  
13 includes statements regarding public  
14 awareness about the health risks of  
15 smoking. His work has included, as you  
16 know, has been a review of polling data on  
17 that subject, and I think that his work  
18 has now included a review of the Semenik  
19 analysis of the individual subscriber  
20 depositions, and I think all of those  
21 things go to Professor Sapolsky's opinions  
22 with respect to the awareness of Empire,  
23 its subscribers, its employees, and the  
24 general public, and I don't know if I can

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1 articulate it any more clearly than that.

2 MR. FITZPATRICK: No. That's all  
3 I need, I think. Okay.

4 BY MR. FITZPATRICK:

5 Q. Referring to the statement that your  
6 opinion is that "the knowledge of health  
7 risks of smoking including its addictive  
8 nature was widespread," could you put a  
9 time frame on that? When did it become --

10 A. It was widespread from the '50s on, at  
11 least.

12 Q. Did the -- from the '50s on. Did the  
13 tobacco industry, were they aware of the  
14 health risks of smoking, including its  
15 addictive nature?

16 MR. STOEVE: I object to the  
17 form.

18 A. I'm not sure I know what they were aware  
19 of in those years.

20 Q. Well, you are prepared to testify, I  
21 think, that the general public was aware  
22 of --

23 A. Right.

24 Q. -- the health risks of smoking, including

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1 its addictive nature, from that period of  
2 time? Right?

3 A. I have looked at public opinion data that  
4 made me believe that that's the case.

5 Q. Now do you believe that the public knew it  
6 but the tobacco industry did not know it?

7 MR. STOEVER: I object to the  
8 form.

9 A. I do not know what they know. I have not  
10 reviewed their records.

11 Q. You haven't looked at any internal tobacco  
12 documents?

13 A. No.

14 Q. Do you believe that --

15 MR. FITZPATRICK: Strike that.

16 Q. How did the public have this general  
17 awareness? How did it come to have the  
18 general awareness?

19 A. There was epidemiological studies and  
20 other kinds of studies that were done in  
21 the '50s that led to the Surgeon General  
22 Report in 1964 that were widely  
23 publicized, both when the studies were  
24 done and when the report was issued.

1 Q. That information was all known to the  
2 tobacco industry? Is that right?

3 A. I don't know. I assume so. Yes.

4 Q. You wouldn't question it if those  
5 epidemiology studies and Surgeon General  
6 Report were known to the general public  
7 that they were known to the tobacco  
8 industry?

9 A. It would. Yes.

10 Q. And you testified a little while ago about  
11 the behavior of the tobacco industry in  
12 its contest, as you put it, with the  
13 health industry. Can you recall any time  
14 during that contest that the tobacco  
15 industry told the public that there were  
16 epidemiology studies indicating that  
17 smoking caused cancer?

18 MR. STOEVEER: I object to the  
19 form.

20 A. I don't know.

21 Q. Can you be a little more specific about  
22 the polls you are referring to? Which  
23 polls have you --

24 A. There have been a series of polls. Most

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1 of the large polling agencies,  
2 organizations, have done polls. Gallup in  
3 particular has done polls. Similar kinds  
4 of questions have been asked over the  
5 years.

6 Q. Do you recall any poll that dealt with the  
7 subject of relative risk and the  
8 perception by the public of the relative  
9 risk of smoking?

10 MR. STOEVER: I object to the  
11 form.

12 A. I can't recall any specific poll.

13 Q. And you are familiar with the concept of  
14 relative risk?

15 A. Yes.

16 Q. Could you explain it to us?

17 A. Its relationship between risks. Some  
18 risks are big; some are small.

19 Q. Would you agree that the probably most  
20 important information to a consumer is the  
21 size of the relative risk of any given  
22 product?

23 MR. STOEVER: I object to the  
24 form.

1 A. No, I don't know.

2 Q. You would agree with me that that is an  
3 important fact to know, would you not?

4 A. Can you back up? And who are we talking  
5 about? I'm not quite sure.

6 Q. The potential consumer of a product.

7 A. Yes.

8 - Q. Do you have any information indicating to  
9 you that smokers in general are aware of  
10 the relative risk of smoking?

11 A. Yes.

12 Q. And could you tell me what that is?

13 A. I think it is high.

14 Q. Do you have an estimate of how much more  
15 or any understanding of -- let me ask you  
16 that.

17 Do you have any understanding of  
18 how much more likely it is for a person  
19 who smokes two packs a day for 30 years to  
20 come down with lung cancer than it is for  
21 a nonsmoker?

22 MR. STOEVEER: You know, Vin, I am  
23 going to object to this line of  
24 questioning, because I think we are

1 getting into the Krosnick area now, and I  
2 think that in that regard, we have some  
3 time, I think until the 19th of March, to  
4 provide a response to Professor Krosnick's  
5 report. Professor Sapolsky has not  
6 submitted a report discussing relative  
7 risk. We are not saying he is not going  
8 to. We just are not going to speak on  
9 that subject, and I think we don't have to  
10 until the 19th. So I am going to object  
11 to questions about relative risk at this  
12 point.

13 MR. FITZPATRICK: Well, Tom, we  
14 are close to trial. We don't have time to  
15 go through this again. The witness has  
16 testified that -- and I think it is part  
17 of your affirmative defense -- that people  
18 were aware of the risks. I am entitled to  
19 probe into that, see if there is any  
20 indication that they were aware of the  
21 relative magnitude of the risk. That is  
22 all -- that is what I am asking.

23 MR. STOEVEER: I disagree with  
24 that. I think because of the Krosnick

1 report, we have until the 19th of March  
2 for our experts to review that work and to  
3 formulate opinions on that subject, and I  
4 don't think that Professor Sapolsky should  
5 be required to offer opinions on relative  
6 risk when he has not offered -- when he  
7 has not used that term or discussed that  
8 topic in his report anywhere.

9 MR. FITZPATRICK: Well --

10 MR. STOEVER: If you want to talk  
11 about awareness, that is fine. But I  
12 think that with respect to relative risk  
13 that we have until the 19th for our  
14 experts to formulate opinions on that. I  
15 understand we are close to trial, but that  
16 is what the judge has ordered, and I think  
17 we are going to stick by that.

18 MR. FITZPATRICK: Well, are you  
19 directing him not to answer?

20 MR. STOEVER: Yes. I am going to  
21 direct him not to answer questions about  
22 relative risk, because I think they relate  
23 to the Krosnick report.

24 MR. FITZPATRICK: Well, I hope

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1 you will let him answer this.

2 BY MR. FITZPATRICK:

3 Q. Without revealing what they are, do you as  
4 you sit here today have opinions about the  
5 relative risk posed by cigarette smoking?

6 MR. STOEVER: I think you can  
7 answer that question.

8 - A. Yes.

9 Q. Well, what is that opinion?

10 MR. STOEVER: And I am going to  
11 object to that question, and I am going to  
12 instruct you not to answer.

13 Q. Have you reviewed the Krosnick report?

14 A. I have read it.

15 Q. Okay. And do you have an understanding  
16 one way or another whether you are going  
17 to issue another report responding to  
18 that?

19 MR. STOEVER: I am going to  
20 object to that, and I am going to instruct  
21 the witness not to answer.

22 MR. FITZPATRICK: Okay. Well,  
23 let's try to get Gold.

24 MS. McDEVITT: Do you want to go

1 off the record?

2 MR. FITZPATRICK: Let's go off  
3 the record while we track him down.

4 THE VIDEOGRAPHER: The time is  
5 11:37, and we are off the record.

6 (A short recess was then taken.)

7 THE VIDEOGRAPHER: The time is  
8 11:48. We are on the record.

9 MR. FITZPATRICK: We have had a  
10 conversation off the record, and I think  
11 we have worked out an arrangement that is  
12 acceptable to both sides, and I thank  
13 Mr. Stoevers for his cooperation in that  
14 regard.

15 BY MR. FITZPATRICK:

16 Q. Professor Sapolsky, I am going to ask you  
17 some questions about relative risk. I  
18 understand that you may be conducting an  
19 ongoing inquiry into that area and you may  
20 study it further. You may study the  
21 Krosnick report, and your views on this  
22 may evolve. What I am simply trying to do  
23 here is to obtain what your views are  
24 sitting here today, and that's the context

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1 of all of my questions.

2 MR. STOEVER: Let me just also  
3 note that the questions are with respect  
4 to his views and not necessarily with  
5 respect to his views on the work done by  
6 Professor Krosnick.

7 MR. FITZPATRICK: That is right.

8 - I do not intend to ask you any questions  
9 about the work done by Dr. Krosnick.

10 BY MR. FITZPATRICK:

11 Q. Okay. My question was: do you have any  
12 understanding of how much more likely it  
13 is for a person who smokes two packs a day  
14 for 30 years to come down with lung cancer  
15 than it is for a nonsmoker?

16 A. I have a general understanding, yes.

17 Q. And can you tell me what that is, sir?

18 A. A heavy smoker has probably 20 times the  
19 risk of a nonsmoker.

20 Q. Have you seen anything in the polls or the  
21 surveys or the individual depositions or  
22 anything else that you have reviewed that  
23 indicate that there is a general awareness  
24 of that among the American public?

1 MR. STOEVER: I object to the  
2 form.

3 A. It is too vague for me. I mean there is  
4 lots of things you said. Have I come  
5 across any statements that? I'm not --  
6 I'm not --

7 Q. Have you seen any evidence that the -- let  
8 me start all over again.

9 In expressing your views that the  
10 risks of smoking are and have been widely  
11 known --

12 A. Yes.

13 Q. -- you reviewed a number of materials?  
14 Correct?

15 A. Yes.

16 Q. And those included surveys and polls and  
17 other material? Is that right?

18 A. (The witness nodding his head.)

19 Q. We need an audible response.

20 A. Yes.

21 Q. Okay. In the course of reviewing those  
22 materials or as a result of your review of  
23 those materials, can you point to any that  
24 indicate that the American public is

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1 generally aware of the fact that the risk  
2 of a heavy smoker is, of coming down with  
3 lung cancer, is 20 times that of a  
4 nonsmoker?

5 A. I don't think they are aware of that  
6 specific number.

7 Q. Do you have any belief as to whether there  
8 is any understanding at all of the  
9 relative risk of a smoker versus a  
10 nonsmoker getting lung cancer?

11 MR. STOEVEER: I object to the  
12 form.

13 A. I think there is some awareness, yes.

14 Q. And can you describe for me the best you  
15 can what you think that awareness is?

16 A. People believe that smoking is very  
17 dangerous for you.

18 Q. Would you be able to put a number on what  
19 you believe the American public thinks  
20 about the increased likelihood of getting  
21 lung cancer if you are a heavy smoker as  
22 opposed to being a nonsmoker?

23 A. No.

24 Q. And I assume you would give the same

1           answers if I were to mention other  
2           diseases, like emphysema or heart disease?

3                   MR. STOEVER: I object.

4                   MR. FITZPATRICK: I don't want to  
5           burden the record, but okay.

6           Q. Do you have an understanding as to how  
7           much more likely it is for the heavy  
8           smoker to get emphysema than it is for a  
9           nonsmoker?

10          A. I don't have any specific number in mind,  
11          no.

12          Q. Do you have a general number?

13          A. It is large.

14          Q. Would it be in the same, 20 times range?

15          A. I don't -- I don't have an opinion, no.

16          Q. Are you aware of anything from your review  
17          of the literature and surveys and polls  
18          that indicates that the American public in  
19          general is aware of the degree to which  
20          their risk is increased of coming down  
21          with emphysema if they are heavy smokers?

22          A. I believe they think that that's a risk of  
23          smoking, if that's what you mean.

24          Q. But, no. My question is relative risk.

1 That is are they aware of how much more  
2 likely it is that they will get emphysema  
3 if they are heavy smokers than if they are  
4 not heavy smokers?

5 MR. STOEVE: I object to the  
6 form.

7 A. I'm not clear what you mean by "how much  
8 - more."

9 Q. Well --

10 A. I think they are aware that it's --  
11 smokers are more likely to be victims than  
12 nonsmokers.

13 Q. All right. And I am accepting that as  
14 your testimony. What I am asking is  
15 whether they have in your view a common  
16 understanding of how much more likely it  
17 is.

18 A. I don't know.

19 Q. So when you opine that "the knowledge of  
20 health risks of smoking including its  
21 addictive nature was widespread," you did  
22 not intend to be opining as to the degree  
23 to which knowledge of the relative risk is  
24 widespread? Is that fair enough?

1 A. Not in this supplemental report (pointing  
2 to Exhibit No. 3).

3 Q. And did you in any of your reports intend  
4 to address the question of the general  
5 awareness of the relative risk?

6 A. I haven't in any of the reports I have  
7 written.

8 Q. And sitting here today, you don't know  
9 what the general awareness of the American  
10 people is about the relative risks of  
11 contracting disease for heavy smokers  
12 versus nonsmokers, do you?

13 A. It is vague. I mean I -- I have a general  
14 knowledge that people believe that heavy  
15 smoking is dangerous for you; it is more  
16 dangerous than light smoking and  
17 nonsmoking. So, yes, I have a general  
18 knowledge of that.

19 Q. Anything more precise than that?

20 A. Not that I have recently reviewed any  
21 figures on relative risk.

22 Q. Okay. Sitting here today, do you have any  
23 opinions on whether smokers view the  
24 relative risks of smoking, relative health

1 risks, as less than or greater than other  
2 hazards, such as exposure to contaminated  
3 groundwater?

4 MR. STOEVER: I object to the  
5 form.

6 A. I believe smokers think that they are due  
7 -- they are exhibiting the most risky  
8 behavior they can. They understand that  
9 it's risky.

10 Q. Well, again it is a little different from  
11 what I am asking. I am asking if -- let  
12 me just give you a hypothetical. Assume  
13 with me that the risks associated with  
14 exposure to formaldehyde insulation are  
15 such that there is one extra chance in  
16 10,000 of contracting cancer, and assume  
17 that 2,500 people out of a thousand are  
18 likely to get cancer in any event -- out  
19 of 10,000, I'm sorry.

20 That is a very low relative  
21 risk? Right?

22 A. As the way --

23 MR. STOEVER: I object to the  
24 form.

1 A. -- you describe it, yes.

2 Q. And it would be very low compared to the  
3 relative risk of smoking?

4 A. Yes.

5 Q. And do you have any basis for concluding  
6 that the American public are aware that  
7 the relative risk of smoking causing them  
8 cancer is much higher than the relative  
9 risk of formaldehyde insulation causing  
10 cancer?

11 A. Yes. I believe they have an awareness  
12 that one is much more risky than another.

13 Q. And on what do you base that opinion?

14 A. The public opinion polls I have seen about  
15 risk, but particularly smoking. People  
16 think that that's a very dangerous  
17 behavior.

18 Q. Okay. Could we go to your report, your  
19 first report again, page 5.

20 A. (Witness complying.)

21 Q. Let me try to cover this briefly before I  
22 do that.

23 I was asking you questions about  
24 the perceptions of the public in general.

52434 3990



1 Had I been asking you those same questions  
2 about Blue Cross/Blue Shield members,  
3 would your answers be any different?

4 A. No.

5 Q. If we refer to page 5 of your report, the  
6 second full paragraph that begins with the  
7 statement, "Blue Cross and Blue Shield  
8 plans, then, were not confused about the  
9 risks of smoking. In particular, the  
10 evidence shows that...."

11 Do you see that, sir?

12 A. Yes.

13 Q. And then you go on to list a number of  
14 items. In the first, you indicate that,  
15 "The plans, as major participants in the  
16 public health community, were fully aware  
17 of the research, beginning in the 1950s,  
18 that pointed to smoking as a major cause  
19 of lung cancer, emphysema, and heart  
20 disease, and frequently cited it in their  
21 own meetings and publications."

22 Do you see that, sir?

23 A. Yes.

24 Q. In expressing that opinion, do you mean to

52434 3991

1 indicate in any way whether the plans knew  
2 as much on these subjects as the tobacco  
3 industry knew?

4 A. I believe the plans were very fully  
5 informed, since they were closely tied to  
6 the medical community about all the risks  
7 and would know a great deal about those  
8 issues.

9 Q. Okay. But that's not exactly my  
10 question. My question is whether you are  
11 intending to express an opinion that the  
12 plans in the 1950s knew as much about the  
13 evidence showing that smoking was a major  
14 cause of lung cancer, emphysema, and heart  
15 disease as the tobacco companies knew.

16 A. I believe yes.

17 Q. And what is that based upon?

18 A. The fact that, as described in the report,  
19 that they were closely tied to the medical  
20 community, they had access to medical  
21 literature, had members on their board who  
22 were fully informed about all of those  
23 issues, employed physicians, and in the  
24 case of Empire were closely tied to some

1 of the organizations in New York City that  
2 were most active in describing the health  
3 risks for cigarette smoking.

4 Q. Okay. Are you aware of what the tobacco  
5 industry knew at this time?

6 A. Not in any detail, no.

7 Q. So you are not able to say whether the  
8 tobacco industry knew more than Empire  
9 knew?

10 A. I am able to say that the Blue Cross plans  
11 should have known, did know, as much as  
12 the medical community knew.

13 Q. But, please, I am asking a specific  
14 question. Are you able to say that they  
15 knew as much as the --

16 MR. FITZPATRICK: Strike that.

17 Q. Are you able to say that Empire knew in  
18 the 1950s as much as the tobacco companies  
19 knew about the various risks, health  
20 risks, associated with smoking?

21 MR. STOEVER: I object to the  
22 form.

23 A. I believe that both were aware of the  
24 evidence and particularly Blue Cross plans

1           were aware. I don't know the details of  
2           what the tobacco companies knew.

3       Q. You don't know if Empire knew more or less  
4           than the tobacco industry?

5       A. I don't know more -- more or less.

6       Q. Okay. Do you know whether, for example,  
7           in the 1950s Empire knew as much about the  
8           carcinogenic materials contained in  
9           cigarettes as the tobacco companies?

10      A. I don't know.

11      Q. And you don't know, do you, whether over  
12           the years from the 1950s to the present at  
13           any given stage whether Empire knew as  
14           much as the tobacco industry knew about  
15           the health risks associated with smoking?

16      A. I don't know.

17      Q. You state in the third bullet -- we'll  
18           come back to the second -- "The plans also  
19           knew that it was often difficult for  
20           smokers to stop, because of the addictive  
21           nature of their smoking behavior."

22                           Do you see that?

23      A. Yes.

24      Q. What do you mean by "the addictive nature

1 of their smoking behavior"?

2 A. It is hard to quit smoking.

3 Q. And why is it hard to quit smoking? Do  
4 you have a view on that?

5 A. I have only a personal view on it. I'm  
6 not an expert on the psychology,  
7 physiology of smoking.

8 Q. Well, maybe I should ask it this way.  
9 What is it that you think the plans knew  
10 about the addictive nature of smoking  
11 behavior?

12 A. They knew it was hard to quit.

13 Q. Okay. Anything more than that?

14 A. Oh, I'm sure they did know more, because  
15 they ran clinics on quitting smoking, so  
16 they knew a lot.

17 Q. Do you know, can you point to anything  
18 indicating that in the 1950s or the 1960s  
19 Empire knew the physiological changes in  
20 the brain that make nicotine addictive?

21 A. I don't know that.

22 THE VIDEOGRAPHER: The time is  
23 12:08 p.m. This is the end of cassette  
24 number one in the deposition of Harvey M.

52434 3995

1 Sapolsky. We are off the record.

2 (Recess taken at 12:08 p.m.)

3 (Recess ended at 12:16 p.m.)

4 THE VIDEOGRAPHER: The time is  
5 12:16 p.m. This is the beginning of  
6 cassette number two in the deposition of  
7 Harvey M. Sapolsky. We are on the record.

8 MR. FITZPATRICK: Okay.

9 BY MR. FITZPATRICK:

10 Q. Dr. Sapolsky, to change the subject a  
11 little bit now, if we could look at the  
12 second bullet in this same paragraph that  
13 we have been referring to on page 5 of  
14 Sapolsky Exhibit 1.

15 A. (Witness complying.)

16 Q. That states that, "The plans were also  
17 aware of the projected economic costs of  
18 these diseases."

19 Do you see that, sir?

20 A. Yes, I do.

21 Q. On what do you base that?

22 A. The fact that the economic costs of these  
23 diseases were -- was discussed in  
24 publications of the plans.

1 Q. And would you agree that there are  
2 economic costs of these diseases?

3 A. Yes.

4 Q. Do you have a --

5 MR. FITZPATRICK: Strike that.

6 Q. Let me refer you to -- I apologize. I  
7 missed the quote. Here it is. Let me  
8 - - refer you to page 10 of this same  
9 document.

10 A. Uh-huh.

11 Q. It contains the following statement.

12 "Also on the Empire board from 1968 to  
13 1975 was Merril Eisenbud, a professor of  
14 environmental medicine at New York  
15 University. He also had no doubts about  
16 the effects of smoking." And you quote  
17 him as saying, "It has been estimated that  
18 about 12 percent of all healthcare costs  
19 in the United States are now directly  
20 attributable to cigarette smoking."

21 Is that quote part of your basis  
22 for concluding that Empire was aware of  
23 the economic costs of smoking?

24 A. Yes.

52434 3997

1 Q. And do you believe that that 12 percent  
2 figure is an accurate estimate?

3 MR. STOEVE: I object to the  
4 form.

5 A. No.

6 Q. In what way is it inaccurate?

7 A. It's a very complex problem to describe  
8 the healthcare costs of any disease, and  
9 I'm not sure that that's a correct number.

10 Q. Do you have an idea in mind that you think  
11 might be maybe the correct number?

12 A. I haven't studied the healthcare costs of  
13 cigarette smoking or other diseases  
14 specifically. I just know that it is a --  
15 would be a very difficult undertaking to  
16 do that.

17 Q. Okay. I want to give you another, another  
18 exhibit now.

19 MR. FITZPATRICK: We are up to  
20 10. I would ask that the reporter mark as  
21 Sapolsky Exhibit 10 a copy of a document  
22 entitled A Frank Statement To Cigarette  
23 Smokers.

24 (Document entitled A Frank



1 Statement To Cigarette Smokers  
2 marked Exhibit No. 10 for  
3 identification.)

4 MR. FITZPATRICK: And I will pass  
5 that out, since no one here has seen that  
6 before.

7 (Handing document to all  
8 counsel.)

9 MR. STOEVER: Then I am going to  
10 just note an objection to the use of this  
11 document with the trial exhibit sticker on  
12 it.

13 MR. FITZPATRICK: Yes. We will  
14 replace it with a clean copy.

15 BY MR. FITZPATRICK:

16 Q. Dr. Sapolsky, have you seen this document  
17 before?

18 A. Only briefly. I have seen a copy of it.

19 Q. Do you recall when you saw it?

20 A. Recently.

21 Q. Okay. You don't recall seeing it back in  
22 1954?

23 A. No, I don't.

24 Q. Okay. Do you understand that this was a

1 statement issued by the tobacco industry  
2 in 1954?

3 A. I wasn't aware of the year until just now.

4 Q. Okay. If you look at the fourth paragraph  
5 in the left-hand side of the document, it  
6 says, "Distinguished authorities point  
7 out," and then let's go to number two,  
8 "that there is no agreement among the  
9 authorities regarding what the cause is,"  
10 referring to lung cancer, the cause of  
11 lung cancer.

12 Do you believe that that was true  
13 in 1954?

14 A. I believe there was disagreement among  
15 experts in that -- in those -- in that  
16 year, yes.

17 Q. So to the extent that Empire was aware of  
18 the issue of whether smoking caused lung  
19 cancer, is it fair to say that if that's  
20 the case they would have been aware of the  
21 fact that there was disagreement --

22 A. They would have been --

23 Q. -- amongst authorities?

24 A. -- aware there was disagreement. They may

1 not have shared that disagreement. They  
2 would have been aware.

3 Q. The next statement is "that there is no  
4 proof that cigarette smoking is one of the  
5 causes."

6 Do you believe that was a true  
7 statement at the time?

8 A. I don't know. I'm not an expert on all of  
9 the evidence about cigarette smoking,  
10 especially the medical evidence, at that  
11 time. I don't know.

12 Q. Well, you have referred to the  
13 epidemiological studies --

14 A. Right.

15 Q. -- indicating that smoking caused lung  
16 cancer that were available to Empire at  
17 the time; correct?

18 A. That's correct.

19 Q. All right. Now it is fair to refer to  
20 those epidemiological studies as some  
21 proof that cigarette smoking is one of the  
22 causes of lung cancer, is it not?

23 MR. STOEVE: I object to the  
24 form.

52434 4001

1 A. Yes. Though I don't know when this  
2 statement came out relative to that set of  
3 studies. I don't know the specifics of  
4 the dates of any of that stuff (pointing  
5 to Exhibit No. 10).

6 Q. Well, assume that those studies were  
7 issued prior to this statement.

8 A. All right.

9 Q. And in that context, this statement  
10 number three, it is not an accurate  
11 statement, is it?

12 MR. STOEVER: I object to the  
13 form.

14 A. I don't know. I mean there was a dispute  
15 about the -- what constituted evidence,  
16 what was causation. This was not an  
17 impossible position to take.

18 Q. Well, was it a rational position to take  
19 at the time?

20 MR. STOEVER: I object to the  
21 form.

22 A. I don't know. I don't know enough about  
23 the state of the medical knowledge in  
24 those years. I know that Blue Cross and

52434 4002

1 Blue Shield would be very fully informed  
2 of whatever state of knowledge there  
3 existed.

4 Q. All right. In fact what you have opined  
5 is that Empire was fully aware of the  
6 research beginning in the 1950s that  
7 pointed to smoking as a major cause of  
8 lung cancer, emphysema, and heart disease?

9 A. Right.

10 Q. That's in your report?

11 A. That's correct.

12 Q. Now is that statement consistent with a  
13 statement that there is no proof that  
14 cigarette smoking is one of the causes of  
15 lung cancer?

16 A. I don't know. I mean I -- I -- I am not  
17 an expert in the medical disputes that  
18 occurred in those years.

19 Q. Well --

20 A. I know that, and I cite in my report,  
21 evidence that Blue Cross was aware of all  
22 of the medical evidence or much of the  
23 medical evidence, but I -- I am not an  
24 expert on what the words "proof" would

1 mean in those years.

2 Q. Okay. Let me ask you -- let me backtrack  
3 a little bit. How long would you say that  
4 you have been involved in the field of  
5 public health?

6 A. Well, I believe I said that one of my  
7 first papers was on fluoridation, which is  
8 - - one of the major public health efforts in  
9 this country. So since I started my  
10 professional career.

11 Q. Back in the -- I think that was the early  
12 '60s?

13 A. In the mid '60s, yes.

14 Q. So you have been active in the field for  
15 over 35 years then?

16 A. In one fashion or another, yes.

17 Q. Now I would call your attention to the  
18 last sentence in that paragraph -- that  
19 column on the left, that states -- this is  
20 the tobacco industry stating -- "We always  
21 have and always will cooperate closely  
22 with those whose task it is to safeguard  
23 the public health."

24 Do you see that?

52434 4004

1 A. Yes.

2 Q. Now in your experience in the public  
3 health field over the past 35 years, is --  
4 did the tobacco companies always cooperate  
5 closely with those whose task it is to  
6 safeguard the public health?

7 A. I don't know all the behaviors that would  
8 be relevant for that. I -- so --

9 Q. Well, you have referred to the contest  
10 between the tobacco industry and the  
11 health --

12 A. Right;

13 Q. -- industry; right? And in the course of  
14 that contest, was the tobacco industry  
15 cooperating fully with the health  
16 authorities about the risks of smoking?

17 MR. STOEVER: I object to the  
18 form.

19 THE WITNESS: Yes.

20 A. And I don't know what the word "cooperate"  
21 would mean. There are lots of ways to use  
22 that word, and I'm not sure what it would  
23 mean in the context you're referring to.

24 Q. Well, I am just asking you common sense.

1 I would ask you to -- you have been in  
2 this field for 35 years, and I am asking  
3 for the benefit of the jury whether you  
4 believe that during that time in fact the  
5 tobacco industry fully cooperated with the  
6 health authorities about the  
7 smoking-related diseases.

8 MR. STOEVER: Objection. Asked  
9 and answered.

10 A. And I'm saying I don't know what you mean  
11 by ~~fully~~ cooperate. There is lots of  
12 things that could be under that heading.  
13 I just don't know.

14 Q. Can you point to any instance where you  
15 would say that the tobacco industry was  
16 cooperating to your knowledge with the  
17 public health industry?

18 A. Yes. I believe that in the preparation  
19 for the Surgeon General Report there were  
20 representatives of the tobacco industry  
21 involved in that preparation of that  
22 report. I assume that is part of what you  
23 mean by cooperation, but I'm not  
24 positive.

52434 4006



1 Q. Do you have a belief that during your time  
2 in public health that the tobacco industry  
3 was forthcoming about the risks associated  
4 with smoking?

5 MR. STOEVER: I object to the  
6 form.

7 A. I don't know all the instances where you  
8 would expect them to be reporting on  
9 this. I don't know.

10 Q. Well, would you agree that as part of --  
11 you referred earlier to their --

12 A. What -- it -- it is clear in my report,  
13 I believe, that no one after a certain  
14 point would trust the tobacco companies to  
15 be the source of information on some of  
16 these things, so.

17 Q. Well, is it your view that that distrust  
18 is warranted?

19 A. I don't know. I just report -- I -- what  
20 I know is that it wouldn't be something  
21 that the Blue Cross plans would be relying  
22 heavily on.

23 Q. Well, would you trust it? Would you trust  
24 what the tobacco industry said in 1970

52434 4007

1 about the health risks of smoking?

2 MR. STOEVER: I object to the  
3 form.

4 A. You mean me personally?

5 Q. Yes. You are a member of the public  
6 health field. Would you trust what the  
7 tobacco industry was saying?

8 A. I am one of the most skeptical people in  
9 America, so I don't trust almost any  
10 statement I hear, so you are dealing with  
11 a skeptic.

12 Q. Well, being a skeptic, did you in fact  
13 distrust what the tobacco industry was  
14 saying?

15 A. I -- I -- I -- when? When would I?

16 Q. Well, let's say in the 1960s.

17 A. I didn't rely on them for my information  
18 about smoking, and I was a smoker then.

19 Q. Did you distrust what they were saying?

20 MR. STOEVER: I object to the  
21 form.

22 A. I don't know what I -- about what I would  
23 -- how I would characterize it back  
24 then.

52434 4008

1 MR. FITZPATRICK: Just to pause  
2 one minute while we get another document.

3 (Pause.)

4 MR. FITZPATRICK: I am going to  
5 ask the reporter to mark as Sapolsky  
6 Exhibit 11 a copy of a document entitled  
7 Smoking and Health, 1964 through 1979, The  
8 Continuing Controversy, issued by the  
9 Tobacco Institute.

10 (Multipage Documents entitled  
11 Smoking and Health, 1964 through  
12 1979, The Continuing Controversy  
13 marked Exhibit No. 11 for  
14 identification.)

15 THE WITNESS: Thank you.

16 MR. FITZPATRICK: This is another  
17 one no one else has seen before.

18 MR. STOEVER: Again, Vin, just  
19 let me note the use of the document with  
20 the trial exhibit sticker on it.

21 BY MR. FITZPATRICK:

22 Q. Professor Sapolsky, have you seen this  
23 document before?

24 A. I don't believe so.

1 Q. And in forming your opinions about what  
2 the American public or members of Blue  
3 Cross were aware of, then naturally you  
4 did not take this document into account?  
5 Is that right?

6 A. That's correct.

7 Q. Okay. And I would like you to assume for  
8 a moment that this was a document issued  
9 by the Tobacco Institute and widely  
10 publicized just prior to the issuance of  
11 the 1979 Surgeon General's Report.

12 Now if you were -- could you turn  
13 to page 2 of this document?

14 A. (Witness complying.)

15 Q. Now remembering that this document was  
16 issued on January 10, 1979, I would like  
17 to call your attention to the following  
18 statement, "Scientists have not proven  
19 that cigarette smoke or any of the  
20 thousands of its constituents as found in  
21 cigarette smoke cause human disease."

22 Do you see that?

23 A. That's the first sentence here. Yes.

24 Q. Yes. Now do you believe that to have been

1 a true statement at the time?

2 A. There is a dispute about causation about  
3 cigarette smoking that I haven't spent a  
4 lot of time on, but, you know, that may be  
5 their view of something. I don't know.

6 Q. Well, is it a valid scientific view? Was  
7 it at the time in 1979?

8 MR. STOEVER: I object to the  
9 form.

10 A. The consensus view was the one expressed  
11 by the Surgeon General Report in 1964, and  
12 that would be the view that most  
13 scientists would hold at that time.

14 Q. So this was at the very least contrary to  
15 what the overwhelming consensus of the  
16 medical and scientific community was?

17 MR. STOEVER: I object to the  
18 form.

19 Q. Is that true?

20 MR. STOEVER: I object to the  
21 form.

22 A. Well, I don't know about overwhelming, but  
23 the consensus of the medical community  
24 would certainly be not that sentence.

52434 4011

1 Q. I would like you to look, if you would, at  
2 page 98.

3 A. (Witness complying.)

4 Q. I am going to refer you to a similar  
5 statement. The first line of the  
6 Conclusion, "The claim that cigarette  
7 smoking causes lung cancer has not been  
8 scientifically proven."

9 Do you see that?

10 A. Yes, I do.

11 Q. Now addressing that statement, do you  
12 believe that that was a true statement  
13 when the Tobacco Institute made it in  
14 1979?

15 A. Well, I believe that there was a dispute  
16 about and there still is to some extent  
17 -- about what is meant by proof and  
18 causation in all science. So, yes, that's  
19 a statement that some people could make.

20 Q. Do you believe that at this time, 1979,  
21 Empire believed that the claim that  
22 cigarette smoking causes lung cancer has  
23 not been scientifically proven?

24 A. No, I don't believe that they believed

52434 4012

1 that.

2 Q. You would believe that they did believe  
3 that it was scientifically proven?

4 A. I believe they did.

5 Q. And in your view, had it been  
6 scientifically proven?

7 A. I certainly stopped smoking, if that's  
8 - part of your answer.

9 Q. Well, is that a yes, you did believe that  
10 it had been scientifically proven?

11 A. Yes. I certainly believed that.

12 Q. And is it your testimony that perhaps the  
13 tobacco industry did not believe that it  
14 had been scientifically proven?

15 A. I don't --

16 MR. STOEVER: I object to the  
17 form.

18 A. I don't know what they believed in. As I  
19 said, this statement is part of a dispute  
20 about what is causation, and I -- I -- you  
21 know, I am not an expert on the scientific  
22 methodology that would allow one statement  
23 or another to have precedent.

24 Q. We were covering the subject of addiction

52434 4013

1 before. I meant to ask you a couple more  
2 questions on it. If you would look at  
3 your first report, Sapolsky Exhibit 1, at  
4 page 7.

5 A. ?? I have it.

6 Q. Okay.

7 MR. FITZPATRICK: Well, I think I  
8 have got the wrong reference.

9 (Pause.)

10 MR. FITZPATRICK: Let's -- I'll  
11 come back to it.

12 THE WITNESS: Okay.

13 Q. Your report on page 32 refers to  
14 differential premiums?

15 A. Yes.

16 Q. And in that regard, is it fair to  
17 summarize your conclusions as follows:  
18 that regardless of any activities by the  
19 tobacco industry, it was very difficult  
20 for health insurers to adopt higher  
21 premiums for smokers than for nonsmokers?

22 MR. STOEVE: I object to the  
23 form.

24 A. No, I don't think that's a fully accurate



1 summary.

2 Q. Okay. All right. How would you -- can  
3 you summarize for me briefly what  
4 you're --

5 A. Well, I mean the report describes it in  
6 more detail, but the -- my belief is that  
7 it was not only difficult to devise such  
8 schemes, but it was unnecessary for them  
9 to devise such schemes, since they were  
10 pass-through organizations.

11 Q. Okay. Okay. I asked a compound question,  
12 and I shouldn't have. I simply was trying  
13 to ascertain whether it is your opinion  
14 that because of administrative matters and  
15 market conditions and other factors it was  
16 difficult for health insurers to charge  
17 higher premiums for smokers than for  
18 nonsmokers.

19 MR. STOEVE: I object to the  
20 form.

21 A. One of the reasons, but not the only one,  
22 would be that, administratively complex.

23 Q. And difficult to actually ascertain who  
24 was a smoker and who was not a smoker?

1 Correct?

2 A. That would be -- that would be one of the  
3 many reasons, yes.

4 Q. Okay. And in addition to that, you'  
5 thought it was not necessary; correct?

6 A. From a business point of view, not  
7 necessary.

8 Q. And why is that?

9 A. Because these are pass-through  
10 organizations. They have experience  
11 rating their populations, and they would  
12 have no need to do this from a business  
13 point of view.

14 Q. And I believe you indicate in your report  
15 that in fact it is very rare for health  
16 insurers to charge higher premiums for  
17 smokers than for nonsmokers. Is that a  
18 fair statement?

19 A. It is not a common practice.

20 Q. And it is not a practice as far as you  
21 know engaged in by Empire?

22 A. As far as I know.

23 Q. Now your point in expressing this opinion  
24 had to do --

1 MR. FITZPATRICK: Strike that.

2 Q. Part of your opinion in this regard was  
3 that it was these factors -- the market,  
4 administrative problems, difficulties, the  
5 fact that it is from a business point of  
6 view unnecessary -- that led health  
7 insurers not to adopt higher premiums for  
8 smokers as opposed to activities by the  
9 tobacco industry?

10 MR. STOEVER: I object to the  
11 form.

12 Q. Is that right?

13 A. I believe that it was not the behavior of  
14 the tobacco companies that led them to do  
15 what they do relative to differential  
16 premiums.

17 Q. Okay. Do you have any quarrel with the  
18 proposition that the tobacco industry did  
19 attempt to discourage or prevent the  
20 implementation of higher premiums for  
21 smokers?

22 MR. STOEVER: I object to the  
23 form.

24 A. I believe in my supplemental report I talk

1 about some joint lobbying efforts on the  
2 part of Blue Cross and the tobacco  
3 companies in one instance where states  
4 were mandating something along those  
5 lines, but -- well, that -- yes.

6 Q. You are aware of other attempts as well?

7 You read the --

8 A. Well --

9 Q. You read the Altman report on this  
10 subject, right?

11 A. Yes.

12 Q. And you responded to that report?

13 A. That's correct.

14 Q. Okay. And you took issue with whether the  
15 tobacco companies were in any way  
16 effective in their attempts to prevent the  
17 adoption of higher premiums for smokers?  
18 Is that fair?

19 A. No. I -- it is not just that they weren't  
20 effective. That they didn't -- there  
21 wasn't much effort or any effort along  
22 those lines.

23 Q. There was no effort along those lines?

24 A. Not that I saw from the Altman report that

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1 I believed was correct.

2 Q. So is --

3 A. We are talking about health insurance, not  
4 life insurance.

5 Q. Let's stay with life insurance. Was there  
6 an attempt by the tobacco industry to  
7 prevent or discourage the adoption of  
8 higher premiums for life insurance?

9 A. An effort that got nowhere very fast, if  
10 that's what you are referring to.

11 Q. All right. But my question is there was  
12 an effort? You will agree with me that  
13 there was an effort, futile though it may  
14 have been?

15 A. Of no impact that it may have been, yes.

16 Q. Okay. Now do you have a view as to what  
17 business it is of the tobacco industry as  
18 to what premiums life insurance companies  
19 are charging?

20 MR. STOEVER: I object to the  
21 form.

22 A. Well, do I -- I am sorry. Could you  
23 repeat the question?

24 Q. Why in your view would the tobacco

52434 4019

1 industry try to discourage insurance  
2 companies from charging higher premiums  
3 for smokers?

4 A. They were trying to protect their smokers,  
5 the people who use their product.

6 Q. If they did this, which I say there was  
7 very little evidence that this was  
8 attempted. Were they trying to protect  
9 their smokers from disease?

10 MR. STOEVEER: I object to the  
11 form.

12 A. It would be cost.

13 Q. Okay. And would you --

14 MR. FITZPATRICK: Well, strike  
15 that.

16 I am sorry. I have misplaced  
17 your supplemental report.

18 (Pause.)

19 MR. FITZPATRICK: I have got it.

20 Q. I referred you to the wrong report before  
21 when I was talking about page 7. I would  
22 like to refer you to your second report.

23 A. Okay.

24 Q. Marked -- your supplemental report, which

1 is Exhibit 2?

2 A. Yes.

3 Q. Okay. And --

4 MR. STOEVER: I am sorry, Vin.

5 Do you have an extra copy of that?

6 (Handing documents to counsel.)

7 MR. STOEVER: Thank you, sir.

8 - BY MR. FITZPATRICK:

9 Q. Now I call your attention to the last  
10 paragraph on that page, which reads as  
11 follows, beginning with the second  
12 sentence of that paragraph: "Blue Cross  
13 executives did not share Altman's optimism  
14 that small economic incentives" -- such as  
15 higher premiums -- "could change  
16 behavior. As Steven Steverts, the vice  
17 president for cost containment programs at  
18 Empire, 1976 to 1985, put it on the  
19 question of whether paying 10 percent more  
20 on Blue Cross and Blue Shield premium  
21 would lead that person to stop smoking, 'I  
22 think that misunderstands how strongly  
23 habituated smokers are and how difficult  
24 it is to stop, and they are unlikely to

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1 stop for that kind of relatively minor  
2 penalty'."

3 Do you see that?

4 A. Yes, I do.

5 Q. Do you agree with that statement by  
6 Mr. Steverts?

7 A. I have -- no, I don't necessarily agree  
8 - with that.

9 Q. Do you believe that a higher premium might  
10 in fact have led smokers to stop?

11 A. I don't know, but I know that what  
12 Mr. Steverts said was he didn't think that  
13 it would have much effect at that level.

14 Q. And you don't have a view one way or the  
15 other whether it might have an effect?

16 A. I don't know what it might have been.

17 Q. Now we turn to the next page. You refer  
18 to the fact that under the heading,  
19 "Wellness Programs," first sentence,  
20 "Altman notes that the tobacco industry  
21 opposed smoking restrictions by asking  
22 what other individual behaviors might also  
23 be subject to similar restrictions. This  
24 is true."



1 Do you see that?

2 A. Yes.

3 Q. Do you have any opinion as to why the  
4 tobacco industry --

5 MR. FITZPATRICK: Strike that.

6 Q. So you believe that it is true that the  
7 tobacco industry opposed smoking  
8 restrictions?

9 A. Yes.

10 Q. Yes. Do you have a view as to why they  
11 did that?

12 A. It affects their customers.

13 Q. In what way?

14 A. It is meant to isolate them.

15 Q. And I believe you testified earlier that  
16 and wrote that to the extent that the  
17 social stigma of isolation could be  
18 applied to smokers that fewer people would  
19 take up smoking? Is that correct?

20 A. Yes.

21 Q. So is it fair to characterize this as an  
22 attempt by the tobacco industry to avoid  
23 that effect?

24 MR. STOEVEER: I object to the

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1 form.

2 A. I believe that they did not wish to see  
3 restrictions placed on their customers.

4 Q. And part of the reason --

5 A. I don't know where all the chain would  
6 lead to.

7 Q. Yes. And the chain may lead to the fact  
8 that fewer people would smoke? Correct?

9 MR. STOEVE: I object to the  
10 form.

11 A. That's one of the possibilities, but I --  
12 there are other possibilities.

13 Q. All right. But you have expressed any  
14 number of views about how the market  
15 drives what organizations do and how  
16 organizations react to risks and how  
17 organizations react to, in particular to  
18 dealing with the problem that their own  
19 product has risk, and I would like to know  
20 is this behavior by the tobacco industry  
21 in opposing smoking restrictions  
22 consistent with the tobacco industry  
23 seeking to avoid a situation in which  
24 fewer people smoked.

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1 MR. STOEVER: I object to the  
2 form.

3 THE WITNESS: Yes.

4 A. I am a little confused by -- could --  
5 could you restate it, please?

6 Q. Yes. All right. You have expressed the  
7 belief that if by smoking restrictions and  
8 other means smoking becomes socially  
9 unacceptable, fewer people are likely to  
10 smoke. Right?

11 A. Yes. I believe that.

12 Q. And it is fair to say that part of the  
13 contest between the tobacco industry and  
14 the health industry has been to avoid that  
15 situation, to prevent that situation from  
16 occurring? Is that correct?

17 MR. STOEVER: I object to the  
18 form.

19 A. I -- that's -- I don't know. I mean it's  
20 -- the contest is a very large one. It  
21 is a very general way of looking at it.  
22 If there is -- I'm not sure whether what  
23 -- whether in this particular instance  
24 that was the intent or not.

1 Q. Well, but in terms of your view of how  
2 organizations react, as you have written  
3 about risk and the fact that their  
4 products may contain risk, this would be  
5 consistent with the reaction of  
6 manufacturers of the product to avoid a  
7 decreased use of that product? Isn't that  
8 right?

9 MR. STOEVEER: I object to the  
10 form.

11 A. Well, consistent with other things as  
12 well.

13 Q. Yes, but it is consistent with that?

14 A. Potentially, yes.

15 Q. I mean it is in fact your view, isn't it,  
16 that if the -- that the tobacco industry,  
17 had it not engaged in the contest --

18 MR. FITZPATRICK: Strike that.

19 Q. Had the tobacco industry not engaged in  
20 the type of efforts that you have  
21 described in your book and alluded to a  
22 little bit here to protect their product,  
23 so to speak, that it is likely that now  
24 there would be less smoking than there is?

1 MR. STOEVER: I object to the  
2 form.

3 A. I don't know how effective all of their  
4 efforts are, so I don't know whether that  
5 would have changed the prevalence of  
6 smoking. I know how many people -- or not  
7 how many people -- but what kinds of  
8 organizations were arrayed on the other  
9 side, and they certainly have had an  
10 influence on the prevalence of smoking in  
11 the United States.

12 Q. There is no doubt that that's the case,  
13 but it is also the case, is it not, that  
14 the tobacco industry has had an effect on  
15 the prevalence of smoking in the United  
16 States?

17 A. I don't know. I mean I have not measured  
18 that, tried to measure what the effect  
19 they might have had on that.

20 Q. I am not really referring to the precise  
21 amount of the effect, but you would not  
22 disagree with the proposition that the  
23 conduct of the tobacco industry over the  
24 last 45 years has to some extent limited

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1 the decrease in smoking in this country?

2 A. A lot of factors have limited that. It is  
3 -- what is amazing is the decrease in  
4 smoking, which is -- was one of the most  
5 prevalent behaviors and dangerous  
6 behaviors has since declined substantially  
7 in that very period.

8 Q. And thank God that's true. But my  
9 question is isn't it true -- you are an  
10 expert in the field of public health, you  
11 have written about the attempts by  
12 organizations that sell products with  
13 risks to assuage the fears of the public  
14 -- isn't it true that tobacco engaged in  
15 that kind of behavior to assuage the fears  
16 of the public about the risks associated  
17 with their products?

18 MR. STOEVE: I object to the  
19 form.

20 A. In the articles I have done on smoking, I  
21 point out a large number of factors that  
22 -- to that. But that is not --

23 Q. But that is one of them?

24 A. How effective, I have not tried to judge

1 the effectiveness of one or the other, but  
2 there are many other factors that are very  
3 important that have to be considered as  
4 well about what happens to the level of  
5 smoking in the United States.

6 Q. Taking all of those factors together, the  
7 behavior of the tobacco industry has  
8 limited the decrease in smoking prevalence  
9 from what that decrease would be had they  
10 not acted in the manner they did?

11 A. I don't know how effective their efforts  
12 have been relative to the effectiveness of  
13 other factors that I do cite. I think the  
14 other factors are likely to be more  
15 important, and I -- you know, I use them  
16 when I describe what I, in the past, what  
17 I have described of what happened to the  
18 politics of smoking in the United States.

19 Q. Okay. If you would look at Exhibit 6,  
20 which is --

21 A. 6?

22 Q. -- Chapter 2 of your Consuming Fears  
23 book.

24 A. Yes.

1 Q. Let's go to the bottom of the page, on  
2 page 20, I am sorry, page 20.

3 A. (Witness complying.)

4 Q. And I will call your attention by way of  
5 example to the last -- the second to last  
6 sentence on that page, "When the Fairness  
7 Doctrine required antismoking  
8 advertisements on radio and television to  
9 counter cigarette ads, cigarette sales  
10 began to fall."

11 Now that is an accurate  
12 statement; right?

13 A. Yes.

14 Q. "The industry voluntarily agreed to  
15 withdraw, beginning in 1971, all radio and  
16 television advertisements for cigarettes,  
17 thereby eliminating any need for the  
18 counter-advertisements and much of their  
19 depressing effect on sales."

20 That's true; right?

21 A. I believe that's true.

22 Q. All right. So that at least in this  
23 instance, you are indicating in your own  
24 publication that the behavior of the



1 tobacco company in fact reversed or  
2 limited the depressing effect on the sale  
3 of tobacco products that was coming about  
4 as a result of television commercials that  
5 warned about the health risk of smoking?

6 MR. STOEVER: I object to the  
7 form.

8 A. Yes. I'm actually citing other people's  
9 views of that advertising campaign --  
10 problem. I mean it was the Fairness  
11 Doctrine has been studied by others.

12 Q. All right.

13 A. And I cite that, and that's an  
14 interpretation that others have about what  
15 happened.

16 MR. FITZPATRICK: I am going to  
17 take a minute to try to shorten things up.

18 THE WITNESS: Sure.

19 MR. FITZPATRICK: Maybe if we  
20 could just go off for a second.

21 THE VIDEOGRAPHER: The time is  
22 1:03 p.m. We are going off the record.

23 (Recess taken at 1:03 p.m.)

24 (Recess ended at 1:13 p.m.)

1 THE VIDEOGRAPHER: The time is  
2 1:13. We are on the record.

3 BY MR. FITZPATRICK:

4 Q. Just referring briefly to your testimony  
5 about insurers passing through their costs  
6 to their insureds, it is true that just as  
7 the costs incurred by a health insurer  
8 affect the premiums paid by one of its  
9 insureds, so, too, does revenue received  
10 by the insurer affect the premiums paid by  
11 one of its insureds simply by virtue of  
12 the nature of the rate setting system?

13 MR. STOEVE: I object to the  
14 form.

15 A. I'm not sure what you mean. Could you --

16 Q. Well, let's assume for sake of argument  
17 that Empire builds into its premiums its  
18 experience and that in that sense it is  
19 passing on the costs to its insureds.  
20 That is really what you are referring to;  
21 right?

22 A. Yes.

23 Q. And that is part of the what I think you  
24 referred to earlier as the automatic

1 nature of the rate setting mechanism?

2 A. That's correct.

3 MR. STOEVEER: I object to the  
4 form.

5 Q. Now if Empire were to receive, for  
6 example, a billion dollars in damages as a  
7 result of this case, how would you expect  
8 that to affect its premiums in the  
9 ordinary course of how Empire operates?

10 A. I don't know. I mean that's -- that's  
11 hypothesis about what might happen. I  
12 don't know.

13 Q. Well, --

14 A. What would happen, how they would use the  
15 money. I have no idea.

16 Q. Well, what you understand and you have  
17 opined on how they operate and how they  
18 set premiums. How could they, within that  
19 construct, use the money?

20 MR. STOEVEER: I object to the  
21 form.

22 A. I don't know. The industry has changed a  
23 lot since I was describing what I was  
24 describing, so I don't know what they

1 would -- the ownership structure of the  
2 organization is different, everything else  
3 is different, so the -- the rate setting,  
4 I have no idea what they would --

5 Q. So you --

6 A. -- where this money would go.

7 Q. Are you equally not certain as to whether  
8 now as they operate their costs are passed  
9 on to insureds?

10 A. Their business has changed over time, so  
11 it is less of an experience rated, more  
12 risk related, than it was. How much, I  
13 don't know right now. But it's -- until  
14 very recently, I do know that it was quite  
15 largely experience oriented. They were --  
16 that was the bulk of their business.

17 Q. But --

18 A. I don't know what it is today.

19 Q. All right. So at least it is possible  
20 that today a portion of their costs are  
21 not passed on to their insureds?

22 A. I don't know.

23 Q. You don't know one way or the other?

24 A. That's right.

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1 Q. I would like to call your attention to  
2 your first report, going back to  
3 Exhibit 1, at page 36.

4 A. (Witness complying.)

5 Q. Here you discuss bankruptcy and fraud?

6 A. Yes.

7 Q. Do you expect to give any testimony at  
8 trial as to healthcare costs and fraud?

9 A. I don't know what I will be asked at  
10 trial.

11 Q. Are you prepared as an expert to voice  
12 opinions as to, for example, the  
13 prevalence of fraud in the healthcare  
14 industry?

15 A. No. I'm not prepared. I'm not an expert  
16 on the fraud in the healthcare industry.

17 Q. Okay. The discussion at the bottom of 36  
18 states that, "Empire, still the largest of  
19 all the plans, was even worse troubled  
20 during this period," the period being  
21 around '92 or '93. "Its computer programs  
22 were unable to reliably match incoming  
23 invoices to its approved physician files.  
24 Since it was impossible to manually review

1 all the claims, Empire simply paid  
2 millions of small claims each year without  
3 any controls at all. Since the plan could  
4 not ascertain whether these providers were  
5 even licensed, Empire had no way of  
6 knowing when the claims were fraudulent."

7 Do you see that statement?

8 A. Yes, I do.

9 Q. Can you tell me in what manner those  
10 observations in your report are relevant  
11 to the opinions that you expect to express  
12 at trial?

13 A. I don't know what questions I will be  
14 asked at trial. I know that Empire had a  
15 series of problems in the early '90s that  
16 questioned its management capabilities,  
17 its -- its behavior, publicly questioned  
18 its behavior.

19 Q. And do you recall what period of time that  
20 relates to?

21 A. No, I don't recall what period of time it  
22 relates to.

23 Q. If I suggested that it was primarily the  
24 period from the late '80s through 1992,

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1 would that refresh your recollection?

2 A. It is possible. I don't know. I have to  
3 look again at the articles that I cite.

4 Q. Okay. And again -- and I know this is  
5 always a little difficult for a witness,  
6 but you don't know what the questions are  
7 until Mr. Stoever or someone else asks you  
8 -- but I am really asking for your  
9 understanding of how this fits into the  
10 context of the rest of your report. What  
11 is the point of including this here with  
12 respect to the opinions that you are  
13 giving or plan to give flowing from this  
14 report?

15 MR. STOEVER: I would object to  
16 the form.

17 A. Well, one wonders about an organization  
18 that has this much administrative problems  
19 and that has this much legal difficulty in  
20 its own affairs. So I cite it as  
21 something to be concerned about, these  
22 organizations, as they portray  
23 themselves. They actually have a  
24 difficult past, and Empire in particular

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1 has had a recent difficult past.

2 Q. By "recent," you mean approximately 10  
3 years ago?

4 A. Yes. Right. Actually at the period I was  
5 dealing with them.

6 Q. And do you have any views about  
7 administrative or management or fraud  
8 - problems at Empire from the period  
9 April 29, 1992 to date?

10 A. No, I don't have any information.

11 MR. FITZPATRICK: I am going to  
12 ask that the reporter mark as Sapolsky  
13 Exhibit 12 a copy of the revised statement  
14 of Richard J. Semenik submitted in this  
15 case.

16 (Revised statement of Richard J.  
17 Semenik, Ph.D. marked Exhibit  
18 No. 12 for identification.)

19 BY MR. FITZPATRICK:

20 Q. And I believe you have previously reviewed  
21 this report?

22 A. I have read this. Yes.

23 Q. Okay. And referring to Exhibit 3, I  
24 believe, which is your --

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1 A. Yes.

2 Q. -- most recent supplemental report, you  
3 state that, "In my view Professor  
4 Semenik's report and the statistical  
5 analysis support my opinion that the  
6 knowledge of the health risks of smoking,  
7 including its addictive nature, was  
8 widespread."

9 A. Yes.

10 Q. Could you point me to what statements in  
11 the Semenik or analyses in the Semenik  
12 report?

13 A. Paragraph 3 says that 68 percent have quit  
14 smoking, and they cite a health reason as  
15 why they quit.

16 Q. This is Roman III on --

17 A. That's correct.

18 Q. -- whatever page that may be.

19 A. I think it is page 5 on the xerox copy.

20 Q. Okay. Okay. Is there anything else in  
21 this --

22 A. Further on, the question is -- relates to  
23 whether they were aware of smoking could  
24 cause serious illness, lung cancer, heart

52434 4039

1 disease, and it is very high.

2 Q. Anything else that you can --

3 A. The overall report. I think it confirms  
4 that people were aware that this was risky  
5 behavior.

6 Q. But again it does not deal, does it, with  
7 the people's perception of the relative  
8 risk of smoking?

9 MR. STOEVE: I object to that  
10 form.

11 Q. Does it?

12 A. I don't think it does.

13 Q. I may not have asked you this. Have you  
14 read any of the individual subscriber  
15 depositions yourself?

16 A. No, I haven't.

17 Q. So any testimony you may give in this  
18 regard is based entirely on your reliance  
19 on the Semenik report?

20 A. I don't know about that. I may read more  
21 between now and then, and you asked me not  
22 to talk about anything else, so --

23 Q. Right.

24 A. -- here I am.

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1 Q. Right, right. Fair enough. You may do  
2 more in this area, but as of now, what you  
3 have done is considered this report rather  
4 than the individual depositions  
5 themselves?

6 A. That's correct.

7 Q. Have you spoken with Dr. Semenik about his  
8 report?

9 A. No, I haven't.

10 Q. Have you spoken with any of the other  
11 experts who have been retained by the  
12 defendants to testify in this case?

13 A. None that are current involved as far as I  
14 know.

15 Q. Was there one who was prior -- formerly  
16 involved?

17 A. Well, Ted Marmor was once involved. I  
18 don't know if he is still on the list. I  
19 actually don't know.

20 Q. Ted Marmor was involved in this case?

21 A. Yes.

22 Q. And who is Ted Marmor?

23 A. A professor at Yale.

24 Q. Okay. When did you have discussions with

52434 4041

1 him about this case?

2 A. Oh, a year and a half ago, two years ago.

3 Q. Could you describe to me the substance of  
4 those conversations?

5 A. Only talking about what Blue Cross would  
6 -- how to look at Blue Cross, what is the  
7 nature of the organization, what is likely  
8 to be the way they make decisions, what is  
9 the relationship between the national and  
10 the individual plans.

11 Q. And Professor Marmor is it?

12 A. Marmor.

13 Q. Professor, why did you ask these questions  
14 of Professor Marmor?

15 A. He was at a meeting that I attended. We  
16 didn't -- it wasn't necessarily I asked  
17 him these questions. I was part of the  
18 discussion. I thought that's what you  
19 asked.

20 Q. Yes. Okay. And did you have reason to  
21 believe that he was knowledgeable on the  
22 subject?

23 A. He -- he was part of the group that I  
24 participated in that wrote the history of

1 Empire.

2 Q. Okay. Okay.

3 MR. FITZPATRICK: I will take a  
4 little break. We might be done.

5 THE VIDEOGRAPHER: The time is  
6 1:29. We are off the record.

7 (Recess taken at 1:29 p.m.)

8 (Recess ended at 1:38 p.m.)

9 THE VIDEOGRAPHER: The time is  
10 1:38. We are on the record.

11 BY MR. FITZPATRICK:

12 Q. Dr. Sapolsky, we are in the home stretch.  
13 If I could ask you to refer to Exhibit 1  
14 again, your first report, page 5.

15 (Witness complying.)

16 A. I have it.

17 Q. Okay. The last two sentences of the first  
18 full paragraph state, "Local plans,"  
19 referring to Blue Cross plans --  
20 "sponsored activities, paren, news  
21 conferences, radio and television shows,  
22 close paren, which informed the public of  
23 the risks of smoking."

24 Do you see that, sir?

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1 A. Yes, I do.

2 Q. Could you give us some examples of that?

3 A. Well, there are many cited in the report.

4 Empire itself sponsored a television  
5 program in the early '60s, in the mid

6 '60s, and continued to do things like

7 that, and then widened it to include

8 various wellness programs, which are cited  
9 here.

10 Q. And that included their, Empire's,  
11 dissemination of literature to its  
12 subscribers about the health risks of  
13 smoking?

14 A. That's correct.

15 Q. And you refer in the last two lines of  
16 page 5, you refer to the active role of  
17 the plans in the antismoking movement."

18 Do you see that?

19 A. That is the bottom of the page?

20 Q. Yes, sir.

21 A. In the antismoking movement, yes.

22 Q. What do you mean by the active role of the  
23 plans in the antismoking movement?

24 A. Nationally, the plans in the '70s

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1 emphasized prevention, which would include  
2 stopping smoking. Individual plans were  
3 sponsors of the Smokeout, including  
4 Empire, and brand cessation clinics  
5 distributed information, very extensively,  
6 about the risks that people could have,  
7 including documents that say that smoking  
8 is the most dangerous thing that you can  
9 do.

10 MR. FITZPATRICK: Okay. I thank  
11 you very much. I appreciate your time. I  
12 have no further questions.

13 MR. STOEVER: We have no  
14 questions.

15 THE VIDEOGRAPHER: The time is  
16 1:41. The deposition is concluded. We  
17 are off the record.

18 (Whereupon, at 1:41 p.m., the  
19 deposition was adjourned.)  
20

21 \_\_\_\_\_  
HARVEY MORTON SAPOLSKY, PH.D

22 Suscribed and sworn to before me.

23 this \_\_\_\_\_ day of \_\_\_\_\_ 2001  
24 \_\_\_\_\_

52434 4045

DEPONENT'S ERRATA SHEET  
AND SIGNATURE INSTRUCTIONS

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When the Errata Sheet has been  
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52434 4046



ATTACH TO DEPOSITION OF: HARVEY M.  
SAPOLSKY, Ph.D.

CASE: BLUE CROSS VS. PHILIP MORRIS

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I have read the foregoing transcript of my testimony, and except for any corrections or changes noted above, I hereby subscribe to the transcript as an accurate record of the statements made by me.

HARVEY M. SAPOLSKY, Ph.D.

52434 4047


the witness  
hereinbefore  
me and the  
record of  
witness  
hereunto

Plymouth, ss.

I, Judith McGovern Williams, a  
Registered Professional Reporter and  
Notary Public in and for the Commonwealth  
of Massachusetts, do hereby certify:

That HARVEY M. SAPOLSKY, Ph.D.,  
the witness whose deposition is  
hereinbefore set forth, was duly sworn by  
me and that such deposition is a true  
record of the testimony given by the said  
witness.

IN WITNESS WHEREOF, I have  
hereunto set my hand this                  day of  
   , 2001.

  
Judith McGovern Williams  
Registered Professional Reporter  
Certified Realtime Reporter  
Certified Shorthand Reporter No. 130993

My Commission expires:

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## EXPERT REPORT OF HARVEY M. SAPOLSKY

2/17/00

### SUMMARY

A central allegation of this case is that the Blue Cross and Blue Shield Plans were misled about the health risks of cigarette smoking by the actions of the cigarette manufacturers. Based on my review of the materials furnished by the plaintiffs, and the public record, I find no contemporaneous evidence to indicate that the Plan officials were misinformed about the hazards of smoking. On the contrary, Blue Cross and Blue Shield officials were fully aware of the hazards, but did little to change any of their practices due to this awareness, because it was not in their business interest to do so. Their consideration of prevention as a cost reduction strategy developed only as they grew worried about possible government regulatory challenges that could threaten their business.

### QUALIFICATIONS

My name is Harvey M. Sapolsky. I reside at [DELETED]

I am Professor of Public Policy and Organization in the Political Science Department at the Massachusetts Institute of Technology in Cambridge Massachusetts.

Attached is my Curriculum Vitae (Appendix A) which describes in full my education, appointments, professional activities, and publications. My graduate degrees are from Harvard University, a Masters of Public Administration and a Ph.D. in Political Economy and Government. With the exception of visiting appointments at the University of Michigan and the U. S. Military Academy at West Point, I have spent my entire

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professional career at the Massachusetts Institute of Technology. My areas of specialization are public policy and government organization with particular emphasis on health, science, and national security policies.

I am a member of the Board of the Urban Medical Group, a non-profit medical practice based in Boston. I am a Fellow of the American Association for the Advancement of Science and the National Academy of Social Insurance. I have served on several committees of the National Research Council/the National Academy of Sciences that have examined various health risks.

I teach and write on health policy issues. My Curriculum Vitae lists my health policy related publications, which include work on product risks, hospital payment, health insurance, bloodbanking, government regulation, and the artificial heart. I have edited or co-authored several health related books: Consuming Fears: The Politics of Product Risks; The American Blood Supply; Federal Health Programs: Problems and Prospects; and Health Planning and Regulation. I have served on the Editorial Board of Inquiry, a Blue Cross publication, and as a member of a group that prepared a history of Empire Blue Cross, at the invitation of Empire.

The opinions expressed in this report are based on my academic training, my years of research and teaching about health care, my knowledge of health insurance and health care organizations, my work on risk, and my study of Blue Cross and Blue Shield Plans with regard to the cigarette smoking issue. These opinions reflect the discovery and analysis that has been completed to date. Because discovery in this case is ongoing, I will continue to evaluate the evidence as it arrives, and will supplement this report as appropriate. In connection with the preparation of this report and other activities related to this case I am paid \$3,000 per day plus expenses.

## I. THE ROLE OF BLUE CROSS AND BLUE SHIELD PLANS - OVERVIEW

The American Health Care System is very dynamic. Not much more than half a decade ago there were expectations of a national health insurance scheme with the federal government as its central manager. Today the market is the system driver with little monitoring, let alone management, by government at any level. In the 1980s medical practice was dominated by the fee-for-service method of payment, and there was much focus on the growth and power of specialists within the health care system. Now prepayment has become dominant and primary care physicians control much of the access to specialist care. When the Medicare and Medicaid Programs were being implemented in the 1960s, there was much concern about the availability of sufficient numbers of hospital beds and physicians to serve the eligible populations. Today we worry about the over capacity that exists in hospitals and the supply of physicians. People in the 1940s, as much as they might have hoped, could not have imagined the advances in medical science that we enjoy today.

Despite all these changes, Blue Cross and Blue Shield Plans have remained important, powerful, and informed actors in the American Health Care System. It was the Plans in the 1930s that helped pioneer the development of private hospital and physician insurance in the United States.<sup>1</sup> The boards of the Blue Plans were for a long time intertwined with those of the local, and national, hospital and medical associations. The American Hospital Association (AHA) sponsored the national coordinating organization for Blue Cross Plans. Until 1972, the AHA actually owned the Blue Cross

<sup>1</sup> Robert Cunningham III and Robert Cunningham Jr., The Blues: A History of the Blue Cross and Blue Shield System, Dekalb, IL: Northern Illinois University Press (1997), Chapter 1

trademarks used to franchise the state Plans.<sup>2</sup> Blue Shield Plans, in turn, were formed by state medical societies, which mostly retained control until the Federal Trade Commission opposition in 1979.<sup>3 4 5</sup>

In 1962 Walter McNerney became President of the Blue Cross Association, the national coordinating and regulatory body for all the Blue Cross Plans.<sup>6</sup> He soon established a research and publication division, and wrote that:

These activities will partly fulfill Blue Cross's obligation... to exercise intelligent leadership in the field of health care.<sup>7</sup>

The Plans still contain knowledgeable, active health care professionals.<sup>8</sup> Officers of the national Association and the local Plans are frequently consulted by public officials on health care policy. Blue Cross and Blue Shield Plans are major contractors for the federal government in the government's administration of the Medicare program. The Plans have easy access to progress in medical research and public health data, and mechanisms to disseminate such information within their organizations. It is impossible to imagine Blue Cross and Blue Shield Plans being ill or misinformed of the risks of cigarette smoking, or any other significant factor affecting the health status of the

<sup>2</sup> Ibid.: 180.

<sup>3</sup> The merged BCBS plans were more independent. Cunningham and Cunningham, The Blues, Chapter 2; Lewis E. Weeks, (ed.), "David W. Stewart: In First Person: An Oral History," Hospital Administration Oral History Collection: 76-77.

<sup>4</sup> Larry Kramer, "Blue Shield Control by Doctors Hit; FTC Study Hits Doctors' Role In Blue Shield," The Washington Post (November 21, 1979): D7.

<sup>5</sup> Thus in New Jersey, Dr. Charles Cunniff was secretary of the Medical Society and a Blue Shield Board member for 17 years. He then became the Blue Shield Medical Director. Deposition of Charles L. Cunniff (December 20, 1999): 36-7.

<sup>6</sup> There is a parallel Blue Shield Association. In 1982 the two groups merged to form the Blue Cross and Blue Shield Association.

<sup>7</sup> "Group and Non-Group Hospital Utilization and Charges," Blue Cross Reports, Vol. 1 No. 1 (July 1963): 12.

<sup>8</sup> The BCBS Presidents from 1962-92, Walter McNerney and Bernard Tresnowski, both came to the organization from Schools of Public health. Lewis E. Weeks, (ed.), "Walter J. McNerney: In First Person: An Oral History," Hospital Administration Oral History Collection (1983). Lewis E. Weeks, (ed.), "Bernard R. Tresnowski: In First Person: An Oral History," Hospital Administration Oral History Collection (1986).

American people and the cost of health care.

The evidence supporting such a view is powerful and direct. Members of Plan boards of directors were among the physicians who took the strongest stands on the health dangers of smoking. Plan and local medical society publications contain early discussions of smoking risks and possible policies to limit the use of cigarettes. The national Association's policy journal, Inquiry, carried articles on the societal costs of smoking. Local Plans sponsored activities (news conferences, radio and television shows) which informed the public of the risks of smoking. Plans disseminated literature on preventative actions, including stopping smoking, which subscribers and employees could take to improve their health.

Blue Cross and Blue Shield Plans, then, were not confused about the risks of smoking. In particular, the evidence shows that:

- the Plans, as major participants in the public health community, were fully aware of the research, beginning in the 1950s, that pointed to smoking as a major cause of lung cancer, emphysema, and heart disease, and frequently cited it in their own meetings and publications.
- the Plans were also aware of the projected economic costs of these diseases.
- the Plans also knew that it was often difficult for smokers to stop, because of the addictive nature of their smoking behavior.
- the Plans, and the rest of the public health community, had disdain for tobacco industry statements and advertising, which they considered misleading and manipulative.

Later sections will document the active role of the Plans in the anti-smoking movement when they discovered that prevention was good business. The final section

reports on the Plans in the 1980s and 1990s when their behavior became indistinguishable from any other for profit company.

## II. BLUE CROSS AWARENESS OF THE RISKS OF SMOKING

Anyone living in the United States since 1950 has been exposed to an enormous amount of information about the hazards of smoking. From Readers Digest to Consumer Reports to the media coverage of the numerous Surgeon General's Reports, the messages have been steadily repeated.<sup>9</sup> In the 1970s and 1980s, federal health officials such as Joseph Califano, and C. Everett Koop kept the issue on the front pages. From the 1960's onward, health warnings were displayed in cigarette ads, and on each package.

Blue Cross and Blue Shield officials also had access to the professional literature on smoking risks. In addition to the Surgeon General's Reports and other national research, Blue Cross and Blue Shield staff had available to them the information published in their local medical journals, published by the same associations that sponsored their Plans. In New York City and State, for example, papers on smoking and lung cancer date back to 1950, and there were over 50 articles/editorials/letters to the editor/etc. on smoking related topics over the ensuing four decades.<sup>10 11 12</sup> There were parallel streams of information published in state medical journals in New Jersey,<sup>13</sup> Louisiana,<sup>14</sup> and Virginia as well.

<sup>9</sup> Richard Kluger, Ashes to Ashes, New York, Vintage Books, 1997.

<sup>10</sup> Walter F. Bugden, "Bronchogenic Carcinoma," New York State Journal Of Medicine (February 1, 1952): 298-300.

<sup>11</sup> Evarts Ambrose Graham, "Primary Cancer of the Lung with Special Consideration of its Etiology," Bulletin of the New York Academy of Medicine, Vol. 27, No. 5 (May 1951): 261-276.

<sup>12</sup> William L. Watson, "Cancer of the Lung: Consideration of Incidence and Etiology," New York Medicine (June 20, 1950): 15-18, 40.

<sup>13</sup> Max Finkelstein, "Cigarette Smoking and Lung Cancer," Journal of the Medical Society of New

In New Jersey, Dr. Max Finklestein concluded that

Hundreds of thousands of men will die of primary lung cancer within the next decade or two, who would not have developed this disease at all, had they not smoked cigarettes. Unless the carcinogen is removed, or a cure for cancer is found, the toll will eventually be fantastic and catastrophic.<sup>15</sup>

In New Orleans, Dr Alton Ochsner was equally concerned:

A dubious advantage, therefore, of cigarette smoking is that one might prevent a cancer of the lung by developing coronary thrombosis relatively early and dying before the carcinogenic effect of cigarettes has a chance to exert itself. One might even suggest that deaths from both these conditions might be prevented by an individual shooting himself at the age of 40.<sup>16</sup>

One conference at New York Hospital in 1953, published in New York Medicine, the journal of the New York City Medical Society, describes the current research on cancer and smoking, on the difficulties of stopping, and the clear opposition of the medical profession to industry's advertising role. Dr. Claude Forkner asked the members of the panel whether or not it is their opinion that the advertising about cigarettes is wrong, morally wrong. Would you not advise the advertising agencies to face this problem squarely, admit that tobacco has ill effects...<sup>17</sup>

There is an ad for Blue Shield in the same issue, so that journal issue was surely reviewed by Plan officials. (Blue Shield executive Carmine F. Ammirati testified that the Plan received all the issues it advertised in.)<sup>18</sup>

Jersey, Vol. 57, No. 11 (September, 1960): 616-622.

<sup>14</sup> Philip H. Jones, "Smoking and Cancer," Journal of the Louisiana State Medical Society, Vol. 106 (December 1954): 474-475.

<sup>15</sup> Max Finklestein, "Cigarette Smoking and Lung Cancer," Journal of the Medical Society of New Jersey, Vol. 57, No. 11 (September, 1960): 622.

<sup>16</sup> Alton Ochsner, et al., "Cancer of the Lung," Journal of the Louisiana State Medical Society, Vol. 106 (July 1954): 264.

<sup>17</sup> Claude E. Forkner, (ed.), "The Harmful Effects of Tobacco," New York Medicine (May 5, 1954): 379.

<sup>18</sup> Deposition of Carmine F. Ammirati (February 2, 2000): 105.

Dr. Irving Wright, one of the participants in that conference, also wrote a letter to Journal of the American Medical Association concerning the dangerous impact of misleading filter cigarette ads on his patients:

the present advertising implies protection in rather vague, but none the less impressive terms, and it may influence patients with vascular disease, who have, with great effort on the part of their physician and themselves, stopped smoking, to resume once more...There is absolutely no evidence that there is any protection ...from these brands; on the other hand, there is quite strong evidence that such protection is completely lacking.<sup>19</sup>

Opposition and disbelief of the tobacco industry's position is also displayed by the 1954 JAMA editorial on "Cigarette Hucksterism":

The unauthorized and medically unethical use of the prestige and reputation of the American Medical Association and THE JOURNAL in Kent cigarette advertising ...constitutes an outrageous example of commercial exploitation of the American medical profession. The implication in these advertisements that the American Medical Association authorizes, supports, or approves of any particular brand of cigarettes...provides a most reprehensible instance of hucksterism. The manner in which the P. Lorillard Company has extolled its particular brand...is to be strongly condemned...Smokers who are misled are likely to obtain a false sense of security without any real protection.<sup>20</sup>

Direct Blue Cross and Blue Shield awareness is also easy to find, beginning with knowledgeable board members. In 1964, Dr. George James, the New York City Health Commissioner, and a prominent anti-smoking activist joined the Empire Blue Cross Blue Shield board.<sup>21 22</sup> Dr. James had previously given up a two pack a day habit<sup>23</sup> and edited

<sup>19</sup> Irving Wright, "Cigarettes," Journal of the American Medical Association, Vol. 155, No. 7 (June 12, 1954): 666.

<sup>20</sup> "Cigarette Hucksterism and the AMA," Journal of the American Medical Association, Vol. 154, No. 14 (April 3, 1954): 1180.

<sup>21</sup> Bibliography and Curriculum Vitae of George James (September, 1964).

<sup>22</sup> In New York City the separate Blue Cross and Blue Shield Plans merged in 1974 to form Blue Cross Blue Shield of Greater New York. In 1984 a further merger with Albany Blue Cross created Empire Blue Cross Blue Shield. For simplicity I will use the current name throughout.

<sup>23</sup> "City's Health Overseer, George James," New York Times (March 18, 1964).

a book on Tobacco and Health.<sup>24</sup> During 1964, James organized a series of smoking cessation clinics for the city that drew over 2000 participants.<sup>25</sup> <sup>26</sup> James repeatedly condemned Industry for their misleading advertising:

Now that the Surgeon General's report has been published, what next? The contest between the tobacco Industry and the health Industry for control of the smoking behavior of the population will undoubtedly continue.<sup>27</sup>

While the cigarette Industry can modify a nation's zeal to prohibit the manufacturing of cigarettes, it must never be allowed to blunt the nation's and its own responsibility to give priority concern to lung cancer.<sup>28</sup>

By 1968 Dr. James had become the Dean of the Mount Sinai School of Medicine, but he was still on the Empire board and he was still campaigning: "We must admit that the single most lethal controllable agent in this country is the American cigarette," he told a conference on smoking and the heart.<sup>29</sup> He went on to compare it to narcotic addiction. In 1971 he asked the Empire board of directors:

whether it was appropriate for [Empire], a health care organization, to invest in tobacco company stocks, in view of the medical evidence and determination of the Surgeon General that cigarette smoking is dangerous to your health.<sup>30</sup>

<sup>24</sup> George James, (ed.) Tobacco and Health, Charles C. Thomas (July 1962).

<sup>25</sup> George James, "A 'Stop Smoking' Program," American Journal of Nursing, Vol. 64, No. 6 (June 1964): 122-125.

<sup>26</sup> Joseph Hixson, "Smoke Clinics and the Fight that Failed," New York Herald Tribune (June 12, 1964).

<sup>27</sup> "Symposium on Tobacco and Health - I," New York Medicine, (July 20, 1964): 417-427.

<sup>28</sup> George James, "Emerging Trends in Public Health," Public Health Reports, Vol. 80, No. 7 (July 1965): 582.

<sup>29</sup> George James, "Summary: Highlights on Smoking and the Heart," Bulletin of the New York Academy of Medicine, Vol. 44 No. 12 (December 1968): 1559.

<sup>30</sup> New York BC "Minutes of Meeting of Board of Directors" (December 15, 1971): 5-6. EMP 0958698-715



Also on the Empire Board from 1968 to 1975, was Merrill Eisenbud, a professor of environmental medicine at New York University.<sup>31</sup> He also had no doubts about the effects of smoking:

"It has been estimated that about 12% of all health care costs in the United States are now directly attributed to cigarette smoking... [It] causes about 80,000 cases of lung cancer per year and probably in excess of 100,000 deaths from cardiovascular disease."<sup>32</sup>

In New Jersey, Dr. Lewis Fares was on the Blue Shield board for decades, beginning in the late 1950s. He was also a regular speaker for the American Cancer Society on smoking issues. He specifically recalls confronting tobacco industry representatives.<sup>33</sup> Also in New Jersey on the Blue Cross board, was Prof. Herman Somers, a noted health economist and co-author of the Inquiry article cited below. Florida Blue Cross Blue Shield had Dr. Thomas Bartley, a lung cancer surgeon, whose research was supported by the Florida Lung Association.<sup>34</sup> From 1974 the Michigan Blue Shield Board had Prof. Eugene Feingold, a noted health policy expert at the University of Michigan School of Public Health.

Blue Cross and Blue Shield publications and media activities also demonstrate their awareness. The Michigan Blue Cross employee magazine had full coverage of the warnings in the 1964 Surgeon General's report. One employee explained why she had quit: "Why should I allow myself to be coerced by advertising into doing something that isn't good for me?" But there were also as interviews with Blue Cross employees who

<sup>31</sup> Obituary for Merrill Eisenbud, Raleigh News and Observer (August 17, 1997).

<sup>32</sup> Merrill Eisenbud, "Health Education and Health Care Systems Research" (May 4, 1978): 2. EMP 0404148-156.

<sup>33</sup> Deposition of Michael McGarvey (December 17, 1999): 58.

<sup>34</sup> Bartley's case histories of his patients carefully noted their smoking history. Board member at least 1978-79. E. W. Swenson, et al., "Regional Pulmonary Arterial Infusion of Acetylcholine and Histamine in Man. II. Patients with Lung Disease," Scandinavian Journal of Respiratory Disease, Vol. 85 (1974 supp.): 92-105.

tried to quit and then relapsed.<sup>35</sup> Thus, even on one page, one can see awareness of the scientific evidence, of distrust of advertising, and of the difficulties in quitting.

Empire sponsored its own television show on WNBC, hosted by Dr. Frank Field, a well known local T.V. personality. Starting in 1966 the show featured long interviews with the three most prominent anti-smoking researchers: Ernst Wynder, of the Sloan-Kettering Institute,<sup>36</sup> E. Cuyler Hammond, of the American Cancer Society,<sup>37</sup> and Oscar Auerbach of the Veterans Administration.<sup>38</sup> For the Auerbach show, Empire put out a press release announcing that: "After a 17 year study, a well-known pathologist concludes that cigarette smoking today is the single most important factor in the development of lung cancer in men." and offering transcripts of the show.<sup>39</sup> By 1975 the Empire employee magazine was highlighting the smoking cessation classes offered by the Plan.<sup>40</sup>

In the Michigan Blue Cross Annual Report, the President's letter, beginning in 1967, cites individual health behavior as the most important factor in health status.<sup>41</sup> In the 1970 and 1971 reports he specifically refers to smoking in this connection.<sup>42 43</sup>

In New Jersey, the Blue Cross Newsletter in 1970<sup>44</sup> and 1972<sup>45</sup> featured American Heart Association promotions, including their stop smoking messages. The

<sup>35</sup> Michigan BCBS, Highlights- Employee Magazine (February 1964): 3. MI 6052905-MI 6052915

<sup>36</sup> "Cancer: Is it Preventable?" WNBC-TV (April 16, 1966).

<sup>37</sup> "The Effects of Cigarette Smoking," WNBC-TV (March 12, 1969).

<sup>38</sup> "Does Cigarette Smoking Cause Cancer? Part 1," Radio TV Reports, Inc (March 28, 1970).

"Does Cigarette Smoking Cause Cancer? Part 2," Radio TV Reports, Inc (April 4, 1970). TJMN 0109835-TJMN 0109848

<sup>39</sup> Greater New York BC, "Press release" (March 26, 1970).

<sup>40</sup> "Course Helps 23 to Stop Smoking," Focus (January 1975): 11. EMP 0603273-74

<sup>41</sup> Michigan BC, Annual Report (1967): 4-6. MI 6043745

<sup>42</sup> Michigan BC, Annual Report (1970): 7. MI 6043675-84

<sup>43</sup> Michigan BCBS, Annual Report, (1971): 8. MI 6043661

<sup>44</sup> "Heart Disease Prevention," Fast Facts, Vol. 11, No. 3 (March 1970). NJ 0144024-23

<sup>45</sup> "February is Heart Month," Fast Facts, Vol. 13, No. 2 (February 1972). NJ 0144025

New Jersey Blue Shield board of directors banned smoking at all its own meetings in 1974.<sup>46</sup>

At the national level, Inquiry published a paper by a Johns Hopkins School of Public Health Professor, in 1971, calling for far stronger action against smoking:

The association of smoking with emphysema, bronchitis and coronary artery disease [as well as lung cancer] have also been shown beyond any doubt.

Attempts to seduce young adults into smoking are continuing. While the package contains an inset warning that "smoking is dangerous to your health," the models in the cigarette advertisements appear to be healthy, sexy, confident, and radiantly happy. More than 40,000 Americans die each year of lung cancer, an almost entirely preventable disease. We would not tolerate the advertising of arsenic or the typhoid bacillus; yet they cause less mortality and morbidity at present than do cigarettes.<sup>47</sup>

Another Inquiry paper (1977) quoted federal officials on their anti-smoking policies.<sup>48</sup> Perspective, the Blue Cross Blue Shield magazine, carried an article that said lung cancer "could be largely eliminated . . . if individuals would stop smoking (1976)."<sup>49</sup>

There was also awareness of the projected economic impact of smoking related diseases. Yet another Inquiry article, for example, calculated the increased health expenditures due to emphysema, which led to a pointed conclusion:

...In light of the fact that tobacco revenues represent an important sector of the economy, which is more important: revenues from tobacco production or the cost of tobacco-related illnesses?<sup>50</sup>

In the same vein, the Delaware Blue Cross Blue Shield Annual Report (1979) cited a New England Journal of Medicine paper that:

<sup>46</sup> New Jersey BS, "Smoking at Board Meetings," Excerpt from Board Meeting Minutes, (September 24, 1974): 5. *NJ 0138161*

<sup>47</sup> Paul D. Stolley, "Cultural Lag in Health Care," Inquiry, Vol. VIII, No. 3 (September 1971): 71-76.

<sup>48</sup> Anne R. & Herman M. Somers, "A Proposed Framework for Health and Health Care Policies," Inquiry, Vol. XIV, No. 2 (June, 1977): 115-170.

<sup>49</sup> "Cancer: 10 Questions/9 1/2 Answers" Perspective (1975): 35. *MI 6049849-56*

<sup>50</sup> Robert A. Freeman et al., "Economic Cost of Pulmonary Emphysema: Implications for Policy on

\$20.2 billion dollars was spent nationally in 1976 for diseases directly attributable to smoking and drinking. Due to inflation, that cost today would be close to \$30 billion.<sup>51</sup>

A 1985 national Association telex distributed to all Plans explained the rationale for the banning of smoking by the Maine Plan:

"The company did not have to look far to find an economic justification for a smoking ban," The Herald reports. "From its own records it culled data showing it paid \$3.6 million to hospitals for smoking-related illnesses suffered by its subscribers in 1983."<sup>52</sup>

Perspective (Summer 1986), cited the Office of Technology Assessment study that the cost of treating smoking-related diseases was \$24 billion. The Journal also cited Surgeon General Koop's conclusion that nicotine is "the most addictive drug in our society."<sup>53</sup>

Thus, for decades, Blue Cross and Blue Shield Plans have known and repeated the messages that smoking was addictive and deadly, and that the tobacco industry was not to be trusted.

### III. BLUE CROSS AND BLUE SHIELD PLANS ARE BUSINESSES

Blue Cross and Blue Shield Plans have always constrained their early social philosophy by business realities.<sup>54</sup> More recently, market pressures have eliminated this social philosophy entirely. Even in the 1980s, Blue Cross and Blue Shield Association

President Bernard Tresnowski judged all policies with a business rationale:

It has been and always will be a social movement for very important business reasons rather than any maudlin commitment to some idealistic social philosophy . . . in order to succeed in a competitive environment,

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Smoking and Health," *Inquiry*, Vol. XIII, No. 1 (March 1976): 21.

<sup>51</sup> Delaware BCBS, *Annual Report* (1979): 10. *DEL 28858*

<sup>52</sup> BCA Telecommunications MTT Message with attached memo (1985). *RI 021952-54*

<sup>53</sup> "Does Prevention Pay Off?" *Perspective* (Summer 1986): 15-17. *MI6049371*

<sup>54</sup> James H. Maxwell, Unpublished History of Empire Blue Cross (August 1990). *EMP 0105133-EMP 0105593*

one must differentiate oneself – product differentiation, business practices. I think what Blue Cross and Blue Shield has represented in the minds of the American public, in its business practices, has helped us to acquire enrollment. Therefore it has been a good business decision as well as a good social philosophy.<sup>55</sup>

The Plans were not alone in offering health insurance to the public for very long.

Commercial insurers soon entered the market. For a while a distinguishing feature of the Plans was their reliance on "community rating" to determine premium costs for customers. With community rating risks are shared broadly, requiring low cost, "good" risks to subsidize high cost or "bad" risks.

Against competition from other insurers, who used a system of "experience rating" in which each group (usually an employer group) paid only its experience, the Plans shifted away from community rating. As early as 1951, Massachusetts Blue Cross had made the shift. By 1960, MacIntyre told the Blue Cross Association annual meeting that the numerous subclasses and limitations on the remaining community rating Plans were equivalent to experience rating, so that switching over completely would only be a modest next step.<sup>56</sup> By 1964 Michigan Blue Cross, the nation's second largest Plan, had converted entirely to experience rating.<sup>57</sup>

In 1986 the General Accounting Office found that 70 percent of Blue Cross subscribers were in experience-rated groups. The remaining community rates were subject to large numbers of subcategories and limitations. From this pattern, the congressional agency concluded that Blue Cross and Blue Shield were more like commercial insurers than they were different.<sup>58</sup>

<sup>55</sup> Lewis E. Weeks, (ed.), "Bernard R. Tresnowski: In First Person: An Oral History," Hospital Administration Oral History Collection (1986): 103.

<sup>56</sup> Program Sessions—1960 Annual Conference of Blue Cross Plans, Los Angeles, CA, pp. 49-51.

<sup>57</sup> Max Shain, "The Change to Experience Rating in the Michigan Blue Cross Plan," American Journal of Public Health, Vol. 56, No. 10 (October 1966): 1695-1698.

<sup>58</sup> Health Insurance: Comparing Blue Cross and Blue Shield Plans with Commercial Insurers, GAO

The community rating and other risk sharing services were the basis of special privileges, including tax exemption, that the state and federal governments awarded the Plans. With the Plans behaving like their competitors, government interest in the Plans at all levels faded and this special treatment disappeared.

But no matter the premium rating system, insurance companies, the Plans included, are largely passthroughs for hospital and physician charges. The risks, with a brief lag, are borne by the buyers. This year's experience is reflected in next year's premium. The insurers have had little incentive to control costs, because their remuneration has been a percentage of the total costs (the provider charges plus the expenses for processing them).

Thus we find Blue Cross Blue Shield President Tresnowski's 1986 comment that because the Plans don't actually bear much risk, they no longer function as a risk-sharing institution:

That's what insurance is all about - accepting the risk. The problem today is there isn't much insurance left, if you've got an administrative service only or a self-insured program. In experience-rated contracts, the risk is defined by the experience of the group. . . It's almost a cost plus kind of contract. The true risk is usually in the individual and the small group. Even in those instances, there is a lot of cross-subsidization that goes from large groups to those smaller groups. So there isn't much risk involved in so-called health insurance any more; health insurance is probably a ~~randomer~~.<sup>59</sup>

The original intent of health risks being spread across the community, then, gave way to a policy of merely passing on risks to purchasers, just like any commercial company.

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Report to the Chairman, Subcommittee on Health, Committee on Ways and Means House of Representatives (July 1986).

<sup>59</sup> Lewis E. Weeks, (ed.), "Bernard R. Tresnowski: In First Person: An Oral History," Hospital Administration Oral History Collection (1986): 91-92.

As commercially minded organizations, Blue Cross and Blue Shield Plans evaluated prevention activities, like any other business decision, as to whether or not it advanced their corporate needs. The next section describes how these calculations changed in the 1970s, as the business environment for the Plans shifted.

#### **IV. THE PLANS TREAT PREVENTION AS A BUSINESS DECISION:**

##### **OVERVIEW**

Health prevention seeks to improve health and reduce expenditures by changing individual behavior. The belief is that individuals, by living healthier lifestyles, could reduce their own health care needs, and thus overall health care costs for the nation.

The most cited behavior change is cigarette smoking.

Concern about health care costs grew especially after the inflation in health expenditures that occurred in the early 1970s, with the initiation of the Medicare and Medicaid programs. The federal government was especially concerned about rising health care costs because it paid for the bulk of the expensive patients, the elderly and the disabled. Due to market incentives, private insurers, the Plans included, seemed largely uninterested in cost containment. It was only when the federal government began to consider tough restrictions on hospital and health care spending, that the Blue Cross and Blue Shield Plans and their national Associations began to show interest in prevention strategies, and then clearly as a way to divert attention from the tougher measures.

National Blue Cross Association documents show the business calculation. There was increasing danger that the federal government would restructure the health system. Association President McNerney told their Annual Meeting that political attention had to

be diverted toward industry self-regulation, and especially toward the behavior of individuals:

... we shall diminish or at least dilute the blame that keeps devolving on us for mounting costs we cannot control.

He encouraged the Plans to become visibly involved in health promotion activities, including smoking cessation campaigns:

Blue Cross organization identification with "stay well, feel better" movements presents a favorable image....It is especially important for the Blue Cross organization to be seen as powerful, progressive, innovative, out of the rut...

Plan advertising can be at the same time an effective educational instrument and a means of identifying Blue Cross Plans with desirable community goals. Here is an opportunity for us to stop taking the heat of criticism for all the faults of a system that is in disrepute with some segments of government and public opinion and, without weakening our ties to the system, to take on a new role as champion of the peoples health.<sup>60</sup>

And the Plans did in fact respond as their national Associations suggested, preparing and distributing prevention literature and sponsoring various prevention related community activities.

Later, as the threat of government intervention dissipated, prevention became a marketing tool. Some Plans would use prevention services as a lure to particular customers or as a device to take business away from another. Charges would be made for such services or discounts would be offered to non-smokers. And when there were no buyers, the Plans ignored the strategy. The next sections trace this adoption of the prevention strategy in detail.

<sup>60</sup> Annual Report of the President to Member Plans-- Blue Cross Assoc., San Francisco, CA (May 11, 1977): 23-4. RI 1018472-RI 1018502.



## V. THE BUSINESS OF PREVENTION

In the mid 1970s, with health costs and premiums rising, and membership leveling-off then dropping, Blue Cross and Blue Shield discovered the merits of prevention. This was an attempt to both burnish their image, and to shift attention from the institutional sources of health care cost inflation to individual behavior. As National Blue Shield Association President William F. Ryan put it

Blue Cross and Blue Shield cannot wage the battle over rising costs alone. What is needed is a concerted effort on the part of everyone involved - physicians, hospitals, the government, and the public. The public can do its share by taking more responsibility for its own health. Our health education programs are one way to show the public ways it can help.<sup>61</sup>

Empire heralded the same theme in its 1977 annual report:

Helping People Take Care of Themselves: Since we believe that improvements in lifestyle will result in better health and fewer heart attacks, strokes and cases of cancer - the three leading causes of death - Blue Cross and Blue Shield of Greater New York is involved in health education activities designed to stimulate people to eat properly, drink and smoke less, and exercise more.<sup>62</sup>

So did New Jersey:

By living healthier lifestyles, we can keep down the cost of health care - this has been our message to New Jersey residents for many years.<sup>63</sup>

John Moye, the President of the Columbus, Georgia Plan told his senior staff:

The cost of health care depends on individuals. If we are going to cut down on the cost of health care, you are going to have to learn to control yourselves. You don't have to smoke; you don't have to overdrink; and you don't have to overeat.<sup>64</sup>

John C. McCabe, the President of the Michigan Plan, told a national conference:

<sup>61</sup> "Directing People Down the Road to Better Health," *The Blue Shield News*, Vol. 12 No. 9 (September 1976): 4.

<sup>62</sup> Greater New York BCBS, *Annual Report* (1977): 5. EMP 0035115-EMP 0035127

<sup>63</sup> New Jersey BC, *Annual Report* (1983): 14. NJ 0056406

<sup>64</sup> BCBS Georgia/Columbus, "Minutes of Executive Staff Meeting" (March 31, 1980): 4. G4 2001385

Health care consumers have a responsibility to eat sensibly, stop smoking, exercise regularly and teach children to do the same.<sup>65</sup>

The hope was to forestall federal hospital cost containment legislation. Blue Cross joined with the American Medical Association and the American Hospital Association in a so-called "Voluntary Effort" to show that the private sector could contain costs on its own.

The Blue Cross Association put out its first health prevention pamphlet in this new effort in August 1974.<sup>66</sup>

Then prevention as a form of cost containment was a major theme at the Blue Shield Annual Program Conference in October 1976. As reported in The Blue Shield News the conference was told that:

staying healthy is the best way for the public to help control health care costs. If people took better care of themselves, Dr. Vickery said, if they didn't smoke, ate less, drank less, exercised more, "the results would be simply astounding."<sup>67</sup>

Blue Shield Association President Ryan endorsed the conference message:

that the individual bears most of the responsibility for his well being, and that medicine can only do so much to help when he fails to take that responsibility...the implications for health, and for the cost of health care, are obvious.<sup>68</sup>

In 1976-77, the Blue Cross and Blue Shield Associations began a cooperative national/local advertising campaign stressing the effect lifestyles have on health care costs: "taking care of yourself is the best kind of health care... and a lot less costly."<sup>69 70</sup>

<sup>65</sup> "Tips on Living the Healthy Life," Highlights (December 1986): 9. MI 6052430

<sup>66</sup> Cited in Anne R. & Herman M. Somers, "A Proposed Framework for Health and Health Care Policies," Inquiry, Vol. XIV No. 2, (June, 1977) note 44.

<sup>67</sup> For more on Dr. Vickery's role see below. "Staying Healthy Is the Best Way to Curb Costs," The Blue Shield News, Vol. 12, No. 11 (November 1976): 3.

<sup>68</sup> "Health Can't be Delegated," The Blue Shield News, Vol. 12, No. 11 (November 1976): 2.

<sup>69</sup> "New Campaign Starts: Effect of Lifestyles On Health Costs Stressed," The Blue Shield News

In June 1977 The Blue Shield News had an extensive feature on the prevention issues outlined in the federal "Forward Plan for Health", including the finding that "sixteen percent of total U.S. mortality could be linked to smoking."<sup>72</sup>

The Blue Cross Association cosponsored a conference on "Future Directions in Health Care", in 1977, which was later published as a book.<sup>73</sup> One speaker, Brian MacMahon, concluded that:

Elimination of cigarette smoking would result in a reduction of mortality from lung cancer of about 90 percent and of the total mortality from cancer of 25-30 percent. No effects of this magnitude can be expected from any known therapy, however widely distributed or skillfully applied.<sup>74</sup>

Another speaker, Thomas McKeown, said that:

It is said that the individual must be free to choose whether he wishes to smoke. But he is not free; with a drug of addiction the option is open only at the beginning, ... The question confronting society is not therefore whether smoking should be prohibited, but whether it is acceptable to induce children to become addicts at an age when they neither know nor much care about the associated risks....

It seems particularly reprehensible ...to seek ways to induce people to damage their health mainly for commercial and fiscal reasons.<sup>75</sup>

Then in 1978, the Blue Cross and Blue Shield Association published an entire book on prevention called Help Yourself!, with Ernst Wynder as its scientific consultant.<sup>76</sup> In it, McKeown cites the figures from the American Lung Association and

(August 1977): 6.

<sup>72</sup> "Blue Cross joins Blue Shield to fund unified ad campaign," Review — Federation of American Hospitals, Vol. 10, No. 3 (June 1977): 30-33.

<sup>73</sup> The total media cost was \$5 million per year. Linda E. Demkovich, "The Blues' Blitz On Health Care Costs," National Journal, (June 2, 1979): 902-906.

<sup>74</sup> "Why Americans Aren't Healthier," The Blue Shield News, Vol. 13, No. 6 (June 1977): 4.

<sup>75</sup> Rick J. Carlson and Robert Cunningham, Future Directions In Health Care: A New Public Policy Cambridge, MA: Ballinger Publishing Company (1978).

<sup>76</sup> Ibid.: 171.

<sup>77</sup> Ibid.: 32.

<sup>78</sup> Blue Cross and Blue Shield Association (BCBSA), Help Yourself! (1978). BCBSA 5833

the American Cancer Society on the Importance of quitting smoking for preventing heart disease, cancer, and emphysema.<sup>77</sup> Another chapter quotes Wynder that:

[If we could] stop everyone from smoking, we would decrease premature mortality due to all of these diseases by 40 percent in men and 30 percent in women.<sup>78</sup>

As part of the same coordinated campaign, Massachusetts produced "Health Thyself: The consumer's guide to better health" in 1977;<sup>79</sup> an anti-smoking guide called "Quit";<sup>80</sup> and in 1979 a "Physicians' Guide" with advice on how to get their patients to stop smoking.<sup>81</sup>

In 1977, the New Jersey Plan distributed the American Cancer Society (ACS) pamphlet "Danger," which "outlines the risk smokers take with their lives."<sup>82</sup> Starting in 1978, Anne Morham, the Plan Director of Health Education in New Jersey, personally conducted smoking cessation clinics for thousands of Blue Cross employees and subscriber groups over the next decade.<sup>83</sup> She and her staff were also active participants in the ACS Great American Smokeout.<sup>84</sup> She won an ACS award for her efforts.<sup>85</sup> Her prevention advertising campaign also won an award; the key headline read "I put out my last cigarette. Now I'm helping others do the same."<sup>86</sup> Blue Notes, the New Jersey employee newsletter had repeated anti-smoking messages from this point on.

<sup>77</sup> Ibid.: 4.

<sup>78</sup> Ibid.: 21-2.

<sup>79</sup> Henry Wechsler and Nell H. Gottlieb, (eds.), Health Thyself: The consumer's guide to better health (1977): 2-3; 13-15; 31-30-32.

<sup>80</sup> Cited in Henry Wechsler, (ed.), Lifestyle and Health - The Physician's Guide to Patient Health Behavior (1979) Published by The Medical Foundation, Inc. and Blue Cross Blue Shield of Massachusetts.

<sup>81</sup> Henry Wechsler, (ed.), Lifestyle and Health - The Physician's Guide to Patient Health Behavior (1979) Published by The Medical Foundation, Inc. and Blue Cross Blue Shield of Massachusetts.

<sup>82</sup> "Smoke Gets In Your Eyes, Your Lungs, Your Blood Vessels . . ." Fast Facts (March 1977). *NJ* 0135675

<sup>83</sup> New Jersey BCBS, Labor News (December 1985). *NJ* 0137148-53

<sup>84</sup> New Jersey BCBS, "Quitters are Winners" Blue Notes (November 1982). *NJ* 0250703

<sup>85</sup> New Jersey BCBS, "Quitter has her day," Blue Notes (August 1981): 4 *NJ* 0251985

<sup>86</sup> New Jersey BCBS, "Admirable," Blue Notes (August 1981): 6 *NJ* 0251985

Rhode Island Blue Cross Blue Shield called its campaign "Change Your Mind About Your Body." "No matter how much money we pour in, we can't hope to fill the health care void caused by lackluster self-care attitudes," said Plan president Arthur F. Hanley, "...Our lifestyles are disabling us, killing us and playing a primary role in pushing up the cost of health services."<sup>87</sup>

In the Louisiana Blue Cross 1978 Annual Report, the President's letter stressed that,

We all - as individuals - could play an active part in improving our lifestyles. We can . . . use alcohol moderately . . . avoid smoking . . . . These steps will allow us to feel better . . . and, hopefully, cut down on the use of healthcare facilities, thereby cutting down costs.<sup>88</sup>

In 1979, Delaware Blue Cross Blue Shield actually paid the Cancer Society's expenses to run the Smokeout.<sup>89</sup> Then, in 1982 the Plan's Executive Vice President was the Smokeout honorary chairman. He noted that, "The only true remedy to the increases in healthcare costs is for Americans, as a whole, to take better care of their bodies and minds."<sup>90</sup> He was trying to quit smoking that year himself.<sup>91</sup>

In January 1977, Empire ran a seminar on health education / health promotion which included a presentation by Wynder's American Health Foundation. The Foundation's Workplace Wellness program prominently featured a smoking cessation component.<sup>92</sup> In 1978, Indiana Blue Cross began to implement this program for their own employees - the most cited workplace wellness experiment.<sup>93 94 95</sup>

<sup>87</sup> "Rhode Island's Out to Change Lifestyles," The Blue Shield News, Vol. 13, No. 4 (April 1977): 3.

<sup>88</sup> Louisiana BC, Annual Report 78 (1978): 13. LA 0024076-88

<sup>89</sup> Delaware BCBS, Annual Report (1979): 13. DEL 28858

<sup>90</sup> "The Great American Smokeout" (Wednesday, Nov. 3, 1982): 10B. DEL 0012153.

<sup>91</sup> In Georgia BC sponsored an employee contest in coordination with the 1979 Smokeout. Proclaimers (December 7, 1979): 2. GA 5001218-25

<sup>92</sup> Cited in Dean A. Grove, et al., "A Health Promotion Program in a Corporate Setting," The Journal of Family Practice, Vol. 9, No. 1 (1979): 83-88, note 6.

<sup>93</sup> Dean A. Grove, et al., "A Health Promotion Program in a Corporate Setting," The Journal of

Empire held another seminar in May 1977 on carcinogens. "We at a Blue Cross and Blue Shield of Greater New York are dedicated to more than processing bills for health care," said President Edwin Werner. "We have dedicated this program to the probable dangers from carcinogens in our environment, the air we breath, the food we eat, the cigarettes we smoke . . ."<sup>96</sup> The symposium featured Wynder and other anti-smoking experts presenting their latest results.<sup>97</sup>

From 1978 on, Empire also co-sponsored smoking cessation courses for its subscribers.<sup>98</sup> The Plan opened a Health Education Center, which starting in 1981, became the host for the Smokeout in New York.<sup>99</sup> By 1982, the Smokeout was a weeklong event that attracted over 2000 people to the Center.<sup>100</sup>

Empire also actively disseminated the message on television. In 1982<sup>101</sup> and again in 1984, Dr. Frank Field conducted a two-week, and then a one-week week long smoking cessation course during the evening news.<sup>102</sup> Peter Hutchings, Empire's Senior Vice President, cited Field's program as evidence of the Plan's longstanding

major commitment to health education....We believe that the most worthwhile health education effort today is to help people stop smoking. The amount of mortality and morbidity that is associated with cigarette smoking is astounding. We put major emphasis on this through our

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<sup>96</sup> *Family Practice*, Vol. 9, No. 1 (1979): 83-88.

<sup>97</sup> "Work Site Health Promotion," *Journal of Occupational Medicine*, Vol. 27, No. 11 (December 1985).

<sup>98</sup> In 1979 Michigan began its own employee wellness program along similar lines. Health services Foundation/BCBSA, "Executive Summary: Health Promotion: A New Direction In Health Care" (July 1988). *EXC RO 0036639-45*

<sup>99</sup> Edwin Werner, "Introductory Remarks," *Bulletin of the New York Academy of Medicine*, Vol. 54, No. 4 (April 1978): 347-348.

<sup>100</sup> "Cancer Epidemic? A Symposium on Carcinogens," Special Issue, *Bulletin of the New York Academy of Medicine*, Vol. 54, No. 4 (April 1978):

<sup>101</sup> Greater New York BCBS, *Annual Report* (1978).

<sup>102</sup> American Cancer Society, "Press Release," *PR Newswire* (December 16, 1981).

<sup>103</sup> Greater New York BCBS, *Annual Report* (1982): 14. *EMP 0035195-EMP 0035222*

<sup>104</sup> WNBC Press Release, "Dr. Frank Field to Conduct Television's Most Ambitious Quit Smoking Clinic - Ten Part Series Aired Weekdays on Channel 4's 'News 4 New York' 6 PM Telecast - Begins Monday, Feb. 1" (January, 14 1982). *TIMIN 257976*

<sup>105</sup> "Great American Smokeout," *Employee Bulletin* (November 14, 1984). *EMP 0103690*

sponsorship of Dr. Frank Field's multi-part T.V. course on Channel 4, and certainly hope that it helped many viewers to break this injurious habit.<sup>103</sup>

The national Blue Cross Fiftieth Anniversary Conference (1979) prominently featured several speakers on smoking and health promotion, including federal officials.

Their papers were included in the 1980 book Working for a Healthier America.<sup>104</sup> In

1982, Blue Cross and Blue Shield Association published the book Wellness at Work.<sup>105</sup>

Empire's Health Education program distributed copies of Take Care of Yourself by Drs. Donald Vickery and James Fries, which highlights the anti-smoking message on its first pages.<sup>106</sup> Thirty-six other Plans had also ordered a combined total of 500,000 copies of the book by the spring of 1978.<sup>107</sup> (Empire alone distributed 98,000 copies that year.<sup>108</sup>) California Blue Shield also began a health education program featuring the Vickery and Fries book (1979).<sup>109</sup>

Then, in the 1980s, the California Plan developed the "Healthtrac" and "Senior Healthtrac" programs which again used Vickery and Fries as their starting point. By 1986 California had franchised this program to 13 other Plans across the country.<sup>110</sup> By the 1990s, 44 Plans were using it, and it generated revenues of millions of dollars a year for

<sup>103</sup> Peter L. Hutchings, "Statement before State Insurance Department" (April 19, 1982): 11-2.

EMP 0350726

<sup>104</sup> Walter J. McNemey, (ed.), Working for a Healthier America (1980).

<sup>105</sup> Robert M. Cunningham Jr., Wellness at Work: A Report on Health and Fitness Programs for Employees of Business and Industry (1982), Blue Cross and Blue Shield Association.

<sup>106</sup> Greater New York BCBS, "Minutes of Meeting of Board of Directors" (May 3, 1978). EMP 0096667-69

<sup>107</sup> "Public Reacts Favorably to Book," The Blue Shield News, Vol. 14, No. 4 (April 1978): 6.

<sup>108</sup> BCBS of Greater New York, Annual Report (1978).

<sup>109</sup> California BS, "Minutes of Organization Meeting of Board of Trustees" (November 14, 1979).

CA 0100138-41

<sup>110</sup> California BS, "Minutes of Meeting of Board of Directors" (June 11, 1986). CA 0100128-30

the California Plan.<sup>111</sup> Indeed, Healthtrac became so successful that it became a separate strategic business unit of the Plan (1993).<sup>112</sup>

Each edition of the book made the anti-smoking message longer and more dramatic. Vickery and Fries call cigarette smoking:

Coffin nails.... A heavy smoker... has decreased life expectancy by five years....Just as important, the last years of a cigarette smoker are not a thing of grace and beauty. Tortuous wheezing, swollen purple lips, and near-suffocation when you're resting mark this condition. (1977)<sup>113</sup>

...the most harmful of personal vices.(1981)<sup>114</sup>

In the United States, it kills 350,000 people per year, equivalent to three fully loaded 747s crashing each day. . . . Cigarette smoking is true addiction, and it is a very difficult habit to change. (1986)<sup>115</sup>

The South Carolina Plan sent the Harvard Medical School Health Letter to 1,200 business and community leaders around the state as part of its health education program in 1980.<sup>116</sup> One issue of the Health Letter carried a cover story on "A Safe Cigarette? Not a Safe Bet."<sup>117</sup> The story concluded that, "the evidence that 'old-time' cigarettes have been killing smokers is rock solid," and that, "Inhaled nicotine is powerfully addicting."<sup>118</sup>

In Michigan, the main Plan employee health clinic featured a large poster that "spells out the dangers of smoking for the unconvinced."<sup>119</sup> The July, 1983 issue of

<sup>111</sup> California BS, "Minutes of Board of Directors Meeting" (June 19, 1991): 7-8. CA 0100104

<sup>112</sup> California BS, "Minutes of Board of Directors Meeting" (August 11-13, 1993): 6. CA 0109099.

<sup>113</sup> Donald Vickery and James Fries, Take Care of Yourself, Reading, Massachusetts, Addison-Wesley Publishing Company (1976 Ed.): 6.

<sup>114</sup> Vickery and Fries, Take Care of Yourself, Reading, Massachusetts, Addison-Wesley Publishing Company (1981 Ed.): 5.

<sup>115</sup> Excerpts from Take Care of Yourself: The Healthtrac Guide to Medical Care (1986 Ed.): 5-6. CA 0107765-94

<sup>116</sup> South Carolina BCBS, Annual Report (1980). SC 0110900-SC 0110932

<sup>117</sup> "A Safe Cigarette? Not a Safe Bet," The Harvard Medical Health Letter, Vol. V, No. 12 (October 1980).

<sup>118</sup> Ibid.: 1, 5.

<sup>119</sup> "BCBSM's Health Clinic," Highlights (March 1981): 5. MI 6052638



"Highlights" featured a cover story about employees who were trying to quit. One employee, though, when asked "how does he feel about reports on the hazards of smoking" replied "I believe 'em, but I still like the taste."<sup>120</sup>

By 1986, 28 of the major Plans reported in a Blue Cross and Blue Shield Association survey that they were supporting smoking cessation programs for employees and, usually, subscribers as well.<sup>121</sup> These Plans included, Empire and New Jersey as already described, as well as Delaware, California, Florida, Georgia, Indiana, Massachusetts, and South Carolina.<sup>122 123</sup>

In 1988, the national Association published a brochure written by the Smoking Institute in Seattle, Why I Smoke . . . How Can I Stop?<sup>124</sup> This was widely distributed to all the Plans.<sup>125</sup>

The plaintiffs in this case contend that they would have been more active anti-smoking campaigners had they only been more aware of its hazards. In Section II, I demonstrated that, on the contrary, they were fully aware. The evidence in this section demonstrates that they were also extremely active. Indeed, many Plans have been full partners in the anti-smoking movement for decades. The plaintiffs' argument denies their own history. Every anti-smoking strategy proposed today was tried by at least some Blue Cross Plan in the 1970s or 1980s, depending on their calculation of their own business and marketing needs. It was business awareness, not smoking awareness, that

<sup>120</sup> "Quitting," *Highlights* (July 1983): 8. *MI 6052558*

<sup>121</sup> John E. Riedel, "Employee Health Promotion: Blue Cross and Blue Shield Plan Activities," *American Journal of Health Promotion* (Spring 1987): 28-32.

<sup>122</sup> 1985 NAIC Winter Conference, attached to December 11, 1986 New Jersey BCBS Memo: 20-22. *NJ 0072409-0072434*

<sup>123</sup> California BS, Letter to Anita J. Ostroff (May 15, 1989). *CA 021076*

<sup>124</sup> BCBSA, Why I Smoke . . . How I Can Stop (1988). *GA 1025862-1025877*

<sup>125</sup> BCBSA, "Memo from Director James Peters, Communication Services -- New Booklet: 'Why I Smoke. . . How I Can Stop'" (November 3, 1988). *MTS 0019708-10*

determined Plan activities. The same concerns motivated the smoking restrictions and non-smoker discounts described in the next sections.

## VI. SMOKING RESTRICTIONS AND BANS

In the 1970s and 1980s, anti-smoking advocates began to focus on the restriction of smoking venues as a key strategy.<sup>126</sup> Many Plans found employee smoking restrictions to be a useful adjunct to their other health promotion activities in promoting their own image. The action was usually accompanied by a press release stressing that this made the company a leader in the healthcare industry and a public educator about the dangers of smoking. As New Jersey put it, "As the leading health insurance carrier in the state, we feel that we should assume a leadership role in adopting a no smoking policy that goes beyond the minimal statutory requirements."<sup>127</sup> The restrictions were always coupled with more intensive smoking cessation classes, because the Plans acknowledged "how difficult it could be to quit smoking."<sup>128</sup> Sometimes these actions were also coordinated with that year's Smokeout.

As early as 1976, Michigan Blue Cross Blue Shield had some workplace restrictions in place.<sup>129</sup> San Francisco offices of California Blue Shield had restrictions defined in 1984.<sup>130</sup>

The Delaware Plan first restricted smoking in 1979, and further restrictions were imposed in 1983.<sup>131</sup> A memo from R.C. Cole, Jr., the Plan President, stated that:

<sup>126</sup> John K. Ingleheart, "The Campaign Against Smoking Gains Momentum," The New England Journal of Medicine, Vol. 314, No. 16 (April 17, 1986): 1059-1064.

<sup>127</sup> New Jersey BC, "President's Report to the Board of Trustees" (October 18, 1985). *NJ 0138266-68*

<sup>128</sup> Michigan BCBS, "Memo on Smoke Cessation Programs" (March 25, 1987). *MI 6049836*

<sup>129</sup> Michigan BCBS, "Employee Smoking Habits," General Memo to All Employees (July 1, 1976). *MI 6049840*

<sup>130</sup> "San Francisco Smoking Policy," Blue Monday Spotlight (February 14, 1984). *CA 020956-61*

Research has made it clear that the smoking of any type of tobacco is injurious to the health of both the smoker and those around the smoker. As a health insurance company and a provider of health care, Blue Cross Blue Shield of Delaware discourages smoking in the workplace.<sup>132</sup>

The Plan then became "one of the first companies in the state to ban smoking in all areas."<sup>133</sup> As Executive Vice President W. Michael Ireland explained:

Scientific studies have confirmed that exposure to cigarette, pipe, and cigar smoke is harmful to everyone's health. . . . Lung cancer is 700% more common in smokers than nonsmokers . . . . General Motors estimates that smoking-related costs add \$500 to the price tag of each auto manufactured.<sup>134</sup>

The Maryland Plan also took action in 1986:

We at Blue Cross and Blue Shield have been concerned about the... mounting evidence of a wide range of ill effects that smoking has on our health and environment... As a major provider of health insurance in this State, we have the responsibility to take action on this very important issue of smoking in the workplace.<sup>135</sup>

The national Association went smoke free in 1987 along with a program of smoking cessation classes.<sup>136 137</sup>

In 1988, California Blue Shield also went to a totally smoke-free policy, as Plan President Thomas Raton explained:

As one of the nation's leading health care companies, it is important that we maintain the healthiest workplace possible, and provide the community with an example of our concern for wellness. The conclusive

<sup>131</sup> Nancy Crotti, "Company says no to smoking," State News (February 20, 1986): 18. DEL 0012158

<sup>132</sup> Delaware BCBS, "Memo for R. C. Cole Jr. about Smoking Policy" (October 19, 1983). DEL 0009511

<sup>133</sup> Nancy Crotti, "Company says no to smoking," State News (February 20, 1986): 18. DEL 0012158

<sup>134</sup> Delaware BCBS, Memo from W. Michael Ireland, "No Smoking Policy" (January 10, 1986). DEL 0009516

<sup>135</sup> Maryland BCBS, "Memo from Carl J. Sardingna to all employees" (January 14, 1986). MD 022403

<sup>136</sup> BCBSA, "A Better Smoke Free Workplace" (1987). BCBSA 9365

<sup>137</sup> BCBSA, "Creating a Smoke Free Environment" (1987). BCBSA 9370

evidence about the negative effects of secondary smoke is too great to ignore.<sup>138</sup>

As it moved to restrict smoking (1986), Empire noted its responsibility to "provide a work environment for employees which is pleasant, clean, and free of recognized health hazards."<sup>139</sup> Then, in January 1990, Empire banned all smoking, noting that: "Mounting evidence repeatedly documents the wide range of ill effects that smoking has on our health and environment." The Empire President explained how smoking bans and health prevention were still being used as a response to rising costs:

We are implementing this new policy because we care about your health. It is also in keeping with our Corporate philosophy which encourages the prevention of illness as a major cost containment measure during these difficult times of escalating health care costs.<sup>140</sup>

In 1991, Empire revisited the question of helping its employees break their cigarette addiction:

Smoking continues to be the most preventable cause of death and disease in our society. In spite of this, fifty-four million Americans smoke, ignoring warnings on every cigarette package and tobacco advertisement, the countless Surgeon Generals' Reports and an endless parade of experts telling us about the effects of cigarette smoke on smokers and non-smokers alike . . . Well, we are very fortunate. We have an answer. Dr. Edward Anselm, our Director of Employee Health Services, is also an expert in the field of smoking cessation. And he is optimistic about our ability to help.<sup>141</sup>

In South Carolina, the Blue Cross Blue Shield President, Joseph F. Sullivan, wrote to his employees to explain the rationale going totally smoke-free at the workplace:

I've been a smoker for some 40 years and I'm a believer in freedom of choice. But . . . there is overwhelming evidence that smoking is harmful to both the smoker and to non-smokers who are exposed to smoke. As

<sup>138</sup> Blue Monday (August 1987). CA 020965-67

<sup>139</sup> Empire BCBS, "Corporate Smoking Policy," Employee Bulletin (July 11, 1986). EMP 0103686-708

<sup>140</sup> Empire BCBS, "Letter from the President," Employee Bulletin (September 6, 1989). EMP 0103755

<sup>141</sup> Empire BCBS, "Smoking Cessation: Employee Bulletin from Chairman" (November 12, 1991). EMP 0103705-706

the leading health insurance company in our state, we have a special role to play in encouraging healthy lifestyles . . . . As a long-time smoker who has tried to quit on several occasions, I know it's not easy.<sup>142 143</sup>

In Mississippi, the employee newsletter, Inside Weekly ran a series of articles on the hazards of smoking from 1984-87.<sup>144</sup> When smoking was banned in 1988, Mississippi was one of several Plans to warn that continued employee smoking was grounds for termination.<sup>145 146</sup> The West Virginia Plan went one step further; they not only banned smoking, they began a policy of refusing to hire smokers all together (1987).<sup>147</sup>

Florida also began restricting smoking in 1985.<sup>148</sup> Florida's experience highlights the positive corporate image impact that anti-smoking activities could have. It first implemented a "smoke free environment" in 1988.<sup>149</sup> This was so successful that the Plan then banned smoking outside its offices in 1990, so that it could go "smoke free" again. A major media campaign was developed in coordination with the American Cancer Society and that year's Smokeout:

<sup>142</sup> South Carolina BCBS, "Memo to Employees" (March 1, 1989). *SC 0104792*

<sup>143</sup> Massachusetts and North Carolina Blue Cross Blue Shield Plans also banned smoking in most of their premises. Massachusetts BCBS, "Director's Meeting" (September 3, 1986). *MA 0037292*; "BCBSNC Smoking Policy," Manual 04 (01/01/89). *BCBSNC 0078411*; "Employee Manual," (July 1, 1992). *BCBSNC 0078410*

<sup>144</sup> "Information About New 'Stop Smoking' Chewing Gum," *Inside Weekly* (April 20, 1984). *MS 036122*; "For Your Sake, Get Rid of the Cigarettes," *Inside Weekly* (November 22, 1985). *MS 036120-1*; "Smoking in Hallways Discontinued," *Inside Weekly* (April 25, 1986). *MS 036065*; "To Smoke or Not Smoke in the Workplace-That Is the Question," *Inside Weekly* (April 10, 1987). *MS 036126-127*; "Cafeteria Smoking Area Designated," *Inside Weekly* (May 1, 1987). *MS 036128-31*

<sup>145</sup> Mississippi BCBS, Memo "Smoking Violation Discipline Policy" (July 14, 1988). *MS 036081*

<sup>146</sup> New Jersey did the same. New Jersey BCBS, "Minutes of Operating Committee Meeting of November 12, 1987" (November 23, 1987). *NJ 0138276-79*

<sup>147</sup> Blue Cross Blue Shield of West Virginia, "Corporate Policy: Hiring of Non-smokers" (October 1, 1987). *MTS 0020192*

<sup>148</sup> Florida BCBS, "Human Resources Policy and Procedure: Smoking in the Workplace" (October 1, 1985). *FLA 4011981-82*

<sup>149</sup> Florida BCBS, "Letter from President William Flaherty to Employees" (June 10, 1987). *FLA 4011968*

We agreed that our overall theme continues to be one of positive reinforcement of our image as a leading health care provider...<sup>150</sup>

The Plan President was quoted as saying,

Reliable medical evidence continues to show that smoking is hazardous to the health of smokers and nonsmokers alike.<sup>151</sup>

The Plan also prepared draft responses to media questions. If a reporter referred to the tobacco industry as a reliable source, the reply was:

Well, first keep in mind, the Tobacco Industry to this day disavows that cigarettes cause any health dangers, much less be the number one cause of preventable death. I wouldn't expect them to respond otherwise. That's much like asking the Flat Earth Society to respond each time a space shuttle is launched.

Clearly, the tobacco industry has no credibility among the medical community who agrees that smoking is harmful to lungs and health.<sup>152</sup>

It was arranged for the Cancer Society to cite Blue Cross Blue Shield as a community leader. To make sure that no protests by angry employee smokers would mar the publicity, their staff "agreed that our active enforcement efforts by Security... etc. should be minimized..."<sup>153</sup>

This was such an effective campaign that in 1993 the Florida Plan again marked the Smokeout, this time by releasing its own "Guide to a Smoke Free Workplace." Their public relations department charted 30 favorable media stories around the state that reported this activity.<sup>154</sup>

Again, in this section, we have evidence of overwhelming knowledge of the harms of smoking, announced by the Presidents of the Plans themselves,

<sup>150</sup> Florida BCBS, "Memo Great American Smokeout Update" (November 13, 1990). FLA 7063666

<sup>151</sup> Florida BCBS, "Approval of Cancer Society Smokeout Media Releases" (November 1, 1990).

FLA 4012184

<sup>152</sup> Florida BCBS, "Memo Great American Smokeout Update" (November 13, 1990). FLA 7063666

<sup>153</sup> Ibid.

<sup>154</sup> Florida BCBS, "Memo Media Coverage on BCBSF 'Guide to a Smoke-free Workplace'" (December 10, 1993). FLA 4012058

and eagerness to win the applause of the public health community and, hopefully, new subscribers, by taking leadership in anti-smoking efforts. When prevention becomes good business, business markets prevention.

## VII. DIFFERENTIAL PREMIUMS

In general, the Plans have been reluctant to provide premium discounts for nonsmokers. Pure community rating did not allow for such distinctions. And, in experience rated groups, the behavior of the group, to the extent that it reduced utilization, was automatically accounted for.<sup>155</sup> Furthermore, when they considered introducing such premiums, even on a limited basis, they found little or no data with which to set a rate.<sup>156</sup> Even if there were net health benefits, they were unlikely to be realized within the one year time period of the usual health care contract. In addition, it can be costly and cumbersome to collect and verify data on smoking status each year.<sup>157</sup>

Thus, the Plans which have introduced such differentials for individuals or small groups have often done so for broader reasons of competitive advantage and public image. For example, the Roanoke, Virginia Plan (now part of Trigon) introduced its smoker's discount in 1984, both to bolster its image in the public health community and to help with its competitive battle with its rival Plan in Richmond.<sup>158</sup> Roanoke even held a rally in Richmond to highlight the contrasts between the Plans.<sup>159</sup>

<sup>155</sup> Deposition of Michael J. Murray (December 3, 1999): 102.

<sup>156</sup> Deposition of William Eaton (December 13, 1999): 27-28; Deposition of Christopher Fitzsimons IV, (January 6, 2000): 140-141.

<sup>157</sup> Deposition of Michael J. Murray (December 3, 1999): 96-101.

<sup>158</sup> Southwestern Virginia BCBS, "Board Meeting Minutes" (June 26, 1984): 1-5. TRI 0072561- TRI 0072565

<sup>159</sup> "Antismoking Rally Given the City of Richmond's role as a major manufacturer of cigarettes

Similarly, when Delaware introduced its discount for only a tiny number of subscribers in 1986, it was also "primarily for favorable PR reasons," in the words of William Eaton,<sup>160</sup> the Chief Actuary who designed the Plan. He also testified that he had no actuarial data for creating the 10% differential for nonsmokers – it was simply a guess. The actual reduced utilization for nonsmokers averaged only 1.6% per year. Thus smokers were subsidizing nonsmokers.<sup>161</sup> When the marketing environment changed in the mid 1990s, the Plan quietly eliminated the discounts all together. Thus both the initiation and the elimination of the differential premiums were determined by business calculations, including the initial boost for the corporate image, but completely divorced from any information about smoking risk.

Business calculations also were the determining factor when the Louisiana Plan introduced a non-smoking discount (for individual subscribers only). Chief Group Underwriter Dean Simon recalls that it was "a request of the marketing department," that led to the discount, since they wanted the feature to better compete with other insurers.<sup>162</sup> Over the decade the discount has been in effect, no one in the Louisiana Plan has ever tried to find out whether smokers do use more health services, or how much the differential should actually be.<sup>163</sup>

Florida Blue Cross and Blue Shield has now reversed the usual logic, hoping to improve its risk selection in the state mandated small group pool. It has introduced a

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and headquarters of tobacco companies, Pearl Bailey rather remarkably chose to appear at a rally there to oppose smoking," *The Washington Post* (Aug. 9, 1984).

<sup>160</sup> Deposition of William Eaton (December 13, 1999): 28.

<sup>161</sup> *Ibid.*: 90-4.

<sup>162</sup> Deposition of Dean M. Simon (February 4, 2000): 210.

<sup>163</sup> *Ibid.*: 263-267.



nonsmoking discount simply to attract the more favored demographic pool that nonsmokers now represent.<sup>164</sup>

## VIII. THE BUSINESS OF BLUE CROSS BLUE SHIELD IN THE 1980s AND 1990s

### Just Another Insurance Company

Year by year during the 1980s, Blue Cross and Blue Shield Plans grew more like their commercial rivals. In the 1990's the distinction faded away altogether. The few Plans that were still sole providers of last resort lobbied hard, and usually successfully, to be relieved of that obligation. In 1994 the national Association lifted its once strict ban on Blue Plans becoming for-profit corporations. Virginia and Georgia were among those Plans that quickly converted. New Jersey and Empire seriously considered converting, but have deferred action for now. But the behavior of virtually all the Plans has become so commercial, that Altman and colleagues concluded that it no longer made any difference if they were formally for-profit or not:

The underwriting and coverage practices followed by non profit insurers today are similar to those of their for-profit competitors, and the willingness to accept all applicants at community rates has virtually disappeared from the marketplace. Preferred tax status for Blue Cross and Blue Shield plans, which, at their origins, provided this community service, has already been eliminated. It seems unlikely that conversions will make any further difference in insurance behavior.<sup>165</sup>

It is notable how often Blue Cross and Blue Shield business calculations lead them not to introduce nonsmoking differentials, or in some cases, even smoking cessation programs. From the Plans' senior doctors and actuaries alike, one finds a

<sup>164</sup> Florida BCBS, "Rating for Tobacco Usage in the CHPAs" (Dec. 12, 1994). FLA 0033583-0033594; FLA 0033911

<sup>165</sup> Gary Claxton, Judith Feder, David Shactman, and Stuart Altman, "Public Policy Issues in Non Profit Conversions: An Overview," Health Affairs (March 1997).

common perspective: we do what the market dictates,<sup>166</sup> we follow the competition,<sup>167</sup> we give the employers what they ask for.<sup>168</sup> Chief Medical Officers, like Dr. Mark Kishel in Georgia, sound exactly like marketing staff members: "we provide insurance, and the employer tells us what they want to be insured for."<sup>169</sup>

The now total dominance of the business perspective has lead some Plans to take a more skeptical look at the health promotion conventional wisdom of the 1970s and 1980s. In Buffalo, for example, NYCP health educators proposed a substantial new anti-smoking campaign. Citing "the literature" their projections offset some of the program costs by assuming that it could reduce short-term health services utilization.<sup>170</sup> However, the Plan's chief actuary overruled the education proponents on that grounds that the net savings would be zero, thus killing the proposal.<sup>171</sup>

A new round of studies evaluating smoking cessation and other wellness programs has added to the skepticism about the efficacy and cost-savings of these programs amongst some Plan officials. A reevaluation of the oft-cited 1985 Indiana Study (supra) using the same database, found there had been no savings at all.<sup>172</sup>

Each Plan has decided on the balance between program activity and skepticism, based on its own local competitive position. In North Carolina for example, It was noted that:

It is more difficult to show savings from wellness programs that involve behavior modification, such as smoking cessation and weight reduction.

<sup>166</sup> Deposition of William R. Shrader (July 12, 1999): 261-262.

<sup>167</sup> Deposition of John M. Little (July 16, 1999): 133-134.

<sup>168</sup> Deposition of Christopher Fitzsimons IV, (January 6, 2000): 154-155.

<sup>169</sup> Deposition of Mark Kishel (December 14, 1999): 181.

<sup>170</sup> Deposition of Phillip A. Smeltzer (November 22, 1999): 62-109.

<sup>171</sup> Deposition of Michael J. Murray (December 3, 1999): 114-115.

<sup>172</sup> John Sciacca et al., "The Impact of Participation in Health Promotion on Medical Costs: A Reconsideration of the Blue Cross and Blue Shield of Indiana Study," *American Journal of Health Promotion*, Vol. 7, No. 5 (May/June 1993): 374-383.

There are marketing reasons for offering wellness programs that may override the lack of savings.<sup>173</sup>

#### Bankruptcy and Fraud

In recent years the Plans have become so commercial that they also display many of the failures and excesses found in the ordinary marketplace. In 1990 the Charleston, West Virginia Plan went bankrupt, owing large sums to both subscribers and providers.<sup>174</sup> It was the first Plan ever to do so.

The Louisiana Plan was also on the verge of insolvency that same year, but was rescued by a cash infusion from the Mississippi Plan,<sup>175</sup> which also took over the management. However, the State Insurance examiners later found that the new management team had benefited themselves as much as the Louisiana Plan:

Prior management decisions in the area of travel and entertainment expenses indicated lavishness and extravagance betraying the intrinsic premise of a not-for-profit organization.<sup>176</sup>

The examiners found that though Blue Cross Louisiana was a "non-profit company," the new managers had spun off its most lucrative activities, which became actual profit centers in Mississippi. The State Insurance Department seized control of the Louisiana Plan and fired the Mississippi managers in 1993.<sup>177</sup>

Empire, still the largest of all the Plans, was in even worse trouble during this period. Its computer programs were unable to reliably match incoming invoices to its approved physician files. Since it was impossible to manually

<sup>173</sup> North Carolina BCBS, "Managed Care Task Force Minutes" (August 30, 1993). BCBSNC 0093938

<sup>174</sup> Cunningham and Cunningham, *The Blues*: 226-229.

<sup>175</sup> Louisiana Department of Insurance, "Report of the Examination of the Louisiana Health Service and Indemnity Company" (December 31, 1992): 21. LA 0032255

<sup>176</sup> *Ibid.*: 13.

<sup>177</sup> *Ibid.*: 39.

review all the claims, Empire simply paid millions of small claims each year without any controls at all. Since the Plan could not ascertain whether these providers were even licensed, Empire had no way of knowing when the claims were fraudulent.<sup>178</sup>

Even more serious were the frauds committed by the Plan Itself. Empire had been vigorously lobbying for new legislation that would end its role as the sole provider of last resort. To make its case it displayed figures which showed substantial losses on this small group, community-rated business. These figures were contained in Empire's annual reports to the State Insurance Department. After the new legislation was passed in 1992, however, it was revealed that these numbers had been falsified to make the case. Most of the real losses were in Empire's mismanaged national accounts, an entirely different business. Empire President Albert Cardone and many of his senior executives were fired. The chief financial officer, Jerry Weissman, tried to cover up the alterations, and ultimately went to prison for perjury and obstruction of justice. (He was convicted of ordering his staff to destroy the evidence, and then lying to a Senate subcommittee investigating the scandal.)<sup>179</sup> The Plan Itself paid a \$1.1 million fine.<sup>180</sup>

## IX. CONCLUSIONS

<sup>178</sup> Jane Fritsch, "Empire Blue Cross Says It Paid Claims Without Checking Them," The New York Times (June 22, 1993): A1.

<sup>179</sup> "Ex-Blue Cross Official Convicted of Perjury in Senate Investigation," The Wall Street Journal (March 4, 1997); "Ex-Officer of Blue Cross Is Sentenced to Jail," The New York Times (September 25, 1998): B5.

<sup>180</sup> "Ex-Blue Cross Official Convicted of Perjury in Senate Investigation," The Wall Street Journal (March 4, 1997).

1. Were the Plans aware of the risks of smoking? From the 1950s onward, the public health community took the lead in ascertaining and disseminating the knowledge about the hazards of smoking. As integral members of that community, the evidence is overwhelming that the Plans shared this knowledge and also helped spread it.

2. Did the Plans understand the economic costs of smoking? Plan documents cite the national projections for the costs of smoking. When the Plans wanted more detailed information, their own databases showed how much they were paying for smoking-related diseases

3. Did the Plans understand the addictiveness of smoking? Yes, the issue is described in every decade. Local medical journals from the 1950s describe some patients who cannot change their behavior. Plan documents cite employees who relapsed, and provide handbooks for physicians to help their patients overcome their desires, as well as smoking cessation classes designed to break addictions. The comparison to other addictions is made by Plan board members, and at Plan sponsored conferences.

4. In all the contemporaneous Plan documents and public statements, there is no indication of any reliance, ever, on tobacco industry statements. Instead, there is substantial evidence that the Plans shared the distrust of, and opposition to the industry, felt by the rest of the public health community. The contest between the tobacco industry and the health industry, as Dr. James put it, has been going on for decades.

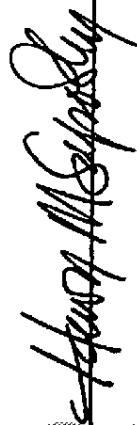
I believe, based on my review of the Blue Cross and Blue Shield provided materials and public sources, that responsible officials of these organizations were never misinformed about the health risks of cigarette smoking, as the risks were discovered.

Blue Cross and Blue Shield officials were aware of the relevant medical literature and had independent ways to assess its validity. They chose, for hardnosed business reasons, when to act and not act on the knowledge they had about the health risks of smoking.

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Statement delivered, February 17, 2000

Signed



Harvey M. Sapolsky

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**Professional Activities**

1999-	Member, Committee to Review the DOD's Dual Use Science & Technology Program
1999	Member, Technology Alternatives to Anti-Personnel Mines Study Committee, National Research Council
1999	Member, Editorial Board of the <i>International Studies Quarterly</i>
1998	Member, Senior Review Group, Army Technology Seminar
1998	Member, Advisory Committee, Center for International Studies, Brookhaven National Laboratory
1996	Consultant, Applied Physics Laboratory, Johns Hopkins University
1995-96	Member, Defense Downsizing, Consolidation, and Conversion Study Group, Council on Foreign Relations
1994-95	Member, Secretary of Energy Advisory Board Task Force on Alternative Futures for DOE National Laboratories
1994-	Member, Board of Directors, Urban Medical Group Inc., Boston
1994-	Member, Council on Foreign Relations
1993	Member, Nonlethal Weapons Study Group, Council on Foreign Relations
1993	Chair, Defense Conversion Symposium, MIT

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Professional Activities (continued)

- 1993 Chair, Policy Implications of Nonlethal Warfare Technologies Conference, MIT
- 1992-97 Member, Heinz Dissertation Award Committee, National Academy of Social Insurance
- 1991-92 Chair, Woodrow Wilson Prize Selection Committee, American Political Science Association
- 1990- Fellow, National Academy of Social Insurance
- 1990-91 Visiting Olin Professor, U.S. Military Academy, West Point
- 1989- Director, M.I.T. Security Studies Program
- 1988-91 - Member, AIDS Technical Advisory Committee, Robert Wood Johnson Foundation
- 1988- 1999 Member, Editorial Board, *Technology Analysis & Strategic Management*
- 1988-95 Director, M.I.T. Communications Forum
- 1988-95 Director, M.I.T. Communications Policy Research Program
- 1988 Chair, Program Committee, M.I.T. Symposium on World Telecommunications Policy
- 1987-95 Consultant, RAND Corporation
- 1987-88 Member, Committee on Risk Perception and Communications, National Research Council
- 1985 Faculty, American Medical Association's Inaugural National Medical Staff Conference
- 1985-89; American Political Science Association representative to the American Association for the Advancement of Science
- 1981-97 for the Advancement of Science
- 1985-90 Member, Editorial Board, *Inquiry*
- 1984-87 Project Director, DRG Evaluation Study, Robert Wood Johnson Foundation
- 1984 Senior Counselor, Institute of Medicine Study Committee, National Academy of Sciences
- 1982-83 Consultant, Health Systems Agency of North Central Connecticut
- 1981-83 Associate Chairman of the M.I.T. Faculty
- 1981- Member, Editorial Board, *Journal of Health Politics, Policy and Law*
- 1980-82 Consultant, Swedish National Board for Technical Development
- 1980-81 Consultant, Committee on Health Planning Standards and Goals, National Research Council
- 1980-81 Member, Committee on Federal Research on Effects of Ionizing Radiation, National Research Council
- 1980-83 Member, Merit Review Board, Health Services R&D, Veterans Administration
- 1979-80 Member, Ethics and Health Policy Panel, Hastings Center

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**Professional Activities** (continued)

1979 Consultant, Committee on Pest Management, National Research Council  
1979 Member, Naval Ship Design Study Panel, Ship Engineering Center  
1978-83 Reviewer, Health Care Financing Administration  
1978-83 Deputy Director, University Health Policy Consortium  
1978-79 Consultant, Veterans Administration Scholars Program  
1978-84 Consultant, National Center for Health Services Research  
1977-78 Consultant, Physician Reimbursement Study, Harvard School of Public Health  
1977-97 Member, International Council for Science Policy Studies  
1976-79 - Consultant, Godman Research Group  
1976-77 German Marshall Fund Fellow  
1975-76 Member, Editorial Board, Review of Navy R&D Management Study, Booz Allen & Hamilton  
1974-77 Member, Committee on Science and Public Policy, American Association for the Advancement of Science  
1974-76 Consultant, Veterans' Health Care Study, National Research Council  
1974 Consultant, Naval War College  
1973- Fellow, American Association for the Advancement of Science  
1972-73 Member and Consultant, Artificial Heart Assessment Panel, National Heart and Lung Institute  
1972 Member, Committee on Chemistry and Public Policy, American Chemical Society  
1972 Consultant, Commission on Government Procurement  
1972 Jasper and Marion Whitney Award, M.I.T.  
1971-72 Visiting Associate Professor, University of Michigan  
1970-75 Consultant, Office of Naval Research  
1969 Consultant, National Academy of Engineering  
1968-73 Secretary, Section K, American Association for the Advancement of Science  
1967-72 Consultant, M.I.T. Instrumentation Laboratory  
1966-67 Research Associate, Harvard University Program on Technology and Society

**Fields:** Security Studies  
The Federal Bureaucracy  
Health Policy  
Science Policy

### Publications -- Books

THIRD BATTLE OF THE ATLANTIC, with Owen Coté (in preparation)

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SCIENCE AND THE NAVY: THE HISTORY OF THE OFFICE OF NAVAL RESEARCH (Princeton, NJ: Princeton University Press, 1990).

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THE AMERICAN BLOOD SUPPLY with A. Drake and S. Finkelstein (Cambridge, MA: M.I.T. Press, 1982).

FEDERAL HEALTH PROGRAMS: PROBLEMS AND PROSPECTS, edited with S. Altman (Lexington, MA: Heath, 1981). Co-authored Overview and Veterans Administration essays.

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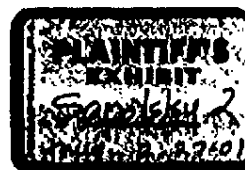
[January 2000]

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SUPPLEMENTAL REPORT OF HARVEY M. SAPOLSKY

FEBRUARY 6, 2001



INTRODUCTION

When I submitted my expert report on February 17, 2000, I reserved the right to supplement it as new information became available. Stuart Altman has written a supplemental report that contains new assertions about the tobacco companies' conduct relative to the plaintiffs.<sup>1</sup> My supplemental report addresses Altman's assertions and the evidence he has cited to support them.

Altman claims that the tobacco companies tried to prevent insurers from promoting:

- non-smoker discounts
- wellness programs
- non-smoking environments

He states "this was a fraud aimed directly at insurers."<sup>2</sup> However, in his deposition, Altman acknowledged that he has no evidence that the alleged activities by the tobacco industry were successful.<sup>3</sup> Thus he cannot demonstrate the fraud that was the main theme of his report.

Altman's fallback claim is that the industry engaged in a systematic pressure campaign.

Yet many of Altman's assertions about industry pressures are unsupported, and where evidence is presented, it is frequently based on memos taken out of context.

Much of the conduct cited is an innocuous and legitimate business practice, often engaged in as much by Blue Cross Blue Shield Plans ("Blue Cross") as by the tobacco companies. Everything from holding meetings with supporters to clipping newspapers is

<sup>1</sup> Stuart H. Altman, Supplemental Report (June 15, 2000).

<sup>2</sup> Altman Supplemental Report: 1.

<sup>3</sup> Deposition of Stuart H. Altman (June 16, 2000): 176-184; 194-221; 234-241.

presented as part of the alleged fraud. Moreover, many of the documents in Altman's own reliance list contain evidence that contradicts his thesis, but they go unmentioned. Finally, there are available numerous depositions of both Blue Cross and industry executives that are relevant to these charges, but Altman makes no use of them.

In addition to Altman's statement, I have reviewed documents from Altman's reliance list and the relevant depositions. I find nothing in this body of material that would lead me to change the conclusion of my original report: that Blue Cross's activities were entirely the result of its own calculation of its own business and political interests. In particular there is still no evidence, from memo or deposition, that any Blue Cross policy over forty years was changed by the intervention of the tobacco companies. In fact, what the memos actually reveal is the frustrations of the tobacco company executives concerning their inability to alter the preferences of the life insurance industry for non-smoking discounts, and of industry in general for smoke-free workplaces.

#### NON-SMOKING DISCOUNTS: OVERVIEW

The history of discounts for non-smokers by life and health insurance companies is succinctly laid out in the 1989 Surgeon General's report.<sup>4</sup> Though Altman cites his knowledge of the Surgeon General's reports<sup>5</sup>, he makes no mention of this section. According to the Surgeon General's report, only some small life insurance companies offered non-smoking discounts in the 1960-70's, because there was no substantial actuarial data from which to calculate rates.<sup>6</sup> When State Mutual, one of these firms, published its accumulated experience in 1979, which showed non-smokers with half the mortality rates of smokers, this "was a stimulus to rapid

<sup>4</sup> Surgeon General's Report (1989): 539-544.

<sup>5</sup> Altman Supplemental Report: 4.

<sup>6</sup> Surgeon General's Report: (1989): 540.

change in the industry."<sup>7</sup> All the major companies quickly used this data to offer their own discounts.<sup>8</sup>

Notably, faced with this competitive pressure, even the two life insurance companies owned by tobacco companies offered non-smoking discounts.<sup>9</sup> One of the most evocative documents in the Altman collection is the memo from CNA actuaries explaining why the company has no choice but to follow the competition if it wants to remain a viable business.<sup>10</sup> (CNA insurance was owned by the same firm that owned Lorillard).

Before 1979, the major life insurance companies were not persuaded of the economic viability of non-smoking discounts. Once the insurance companies had an empirical basis for a business assessment, the tobacco companies were powerless to prevent the quick spread of discounts. None of the evidence offered by Altman, and reviewed below, modifies this conclusion.

### THE OCCIDENTAL LETTERS

Altman describes a letter from the Tobacco Institute to the Occidental Insurance Company as evidence of successful pressure on the company's non-smoking discounts.<sup>11</sup> But he does not discuss the next two letters in the same sequence, even though they are also in his collection. In the next letter, Occidental replies that the source of its statistics was the American Cancer Society (ACS), and that it will discuss the Tobacco Institute complaints with the ACS.<sup>12</sup> This can only be read as a refusal. No one at the ACS has given any credence to the Tobacco

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.: 541.

<sup>9</sup> Trenk, B. S., "Health Insurers slow to accept non-smoker discounts" American Medical News (October 18, 1986): 43-44.

<sup>10</sup> CNA Memorandum to E. J. Noha. 03735912-3

<sup>11</sup> Tobacco Institute letter from Horace R. Kornegay to Mino T. Lake (January 31, 1980). LD-900001-40H-0001164-6 Cited in Altman Supplemental Report: 5.

<sup>12</sup> Occidental Life letter from Robert W. Graf to Horace R. Kornegay (February 28, 1980). TIMN 0073703

Institute's statistics for decades. The Institute's frustrated reply to Occidental's answer was to complain about the ACS as well.<sup>13</sup> Not surprisingly, there was no change in the non-smoking discounts. Thus Altman has reversed the actual import of the exchange.<sup>14</sup> Rather than showing effective pressure by the Tobacco Institute, it shows its impotence.

### LOBBYING

Altman makes much of the lobbying efforts of the tobacco companies. I note that this is the constitutionally protected mechanism for influencing public policy, surely engaged in as much by Blue Cross plans as tobacco companies, in each case where their specific business interests are concerned. Indeed Empire Blue Cross and Philip Morris have on occasion used the same lobbying firm.<sup>15</sup>

On the specific question of mandatory non-smoker insurance discounts, Blue Cross and the tobacco companies worked together to oppose the bills. In Wisconsin, in September, 1979, the Tobacco Institute and several life insurance companies testified against such a mandatory bill. They were joined at the witness table by Gene Everett of Wisconsin Blue Cross, who said, as reported by the Milwaukee Journal:

his organization encouraged smokers to quit, but opposed the bill. He said it would be "almost impossible from an administrative standpoint" to set different rates because most health insurance was written for groups not individuals.<sup>16</sup>

The Blue Cross position is also referred to in one of Altman's Tobacco Institute documents,<sup>17</sup> but is not mentioned in his report.

<sup>13</sup> Tobacco Institute letter from Horace R. Kornegay to Robert W. Graf (March 6, 1980). *TIMN* 0073701

<sup>14</sup> Altman Supplemental Report: 5-6.

<sup>15</sup> Bauder, David. "Health Insurers, Lobbyists may Have Conflict" *Buffalo News* (December 11, 1992): A4.

<sup>16</sup> "Non-Smoker Rate Break Opposed" *Milwaukee Journal-Sentinel* (September, 14, 1979).

<sup>17</sup> Tobacco Institute Memorandum "Data Collection: Insurance Premium Discounts" (August 1982): 452802. *TIMN* 4452713-9, *TIMN* 452772, *TIMN* 452798-807

Altman also takes up the exchange of correspondence between RJR and Aetna over a proposed federal bill in 1991, but quotes out of context.<sup>18</sup> Aetna's letter actually says that it was never a supporter of this legislation and was pleased to set the record straight.<sup>19</sup> The comment from the RJR lobbyist in the cover memo that "we really hit them hard... and it had an impact"<sup>20</sup> does not match the history described in Aetna's letter.

Finally, as I will describe in the next section, health insurance is structured and sold in a very different fashion from life insurance. This makes the activities of the life insurance companies basically irrelevant to health insurers, including Blue Cross.

#### THE HEALTH INSURANCE DIFFERENCE

Altman's supplemental report notes that "85% of Americans with private health insurance are insured through employer-provided group insurance policies."<sup>21</sup> He also says that "...few health insurers have been able to implement pricing differential mechanisms for tobacco use in their group insurance products."<sup>22</sup> These points are correct.

However he attributes the lack of non-smoking discounts for health insurance to actions, in part, of the tobacco industry.<sup>23</sup> This is incorrect and without foundation. Both the Surgeon General's 1989 report,<sup>24</sup> and my February report<sup>25</sup> explain why those built-in differences make non-smoking discounts irrelevant for most health insurance policies. No outside influences are necessary to account for this market-driven behavior.

<sup>18</sup> Altman Supplemental Report: 13.

<sup>19</sup> Aetna Memorandum from J. W. McLane to David Marshall (June 26, 1991). 507771529

<sup>20</sup> RJR Cover Letter (July 11, 1991). 507771528

<sup>21</sup> Altman Supplemental Report: 7.

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

<sup>24</sup> Surgeon General's Report (1989): 543.

<sup>25</sup> Sapolsky Report: 14-15; 32.

The crucial point is that group policies are experience rated. That means that this year's premiums are primarily determined by the prior claims experience of that group. Any behavior by group members, such as reducing smoking, that leads to reduced utilization automatically becomes factored into the premiums. No discount for individual non-smokers is needed. (Note also that, as described in my report, experience rated contracts are essentially pass through.

They do not place Blue Cross at risk.)

In addition, even if the health insurers wanted to offer non-smoking discounts, there is ample testimony that this would be administratively cumbersome and expensive. They do not know who the smokers are in the population, and they have scant actuarial data on whether smokers actually utilize more health services. As Joseph Martin Dickler, the chief actuary for New Jersey Blue Cross put it

In all my experience with large groups, you don't have enough information to know in sufficient detail the lifestyles of the individual employees. Or their spouses or children who were also covered under these policies....

It boggles the mind to think about collecting such information.<sup>26</sup>

Thus, for the 85 percent of Blue Cross subscribers and revenues derived from large group contracts, which cover tens of thousands of individuals per group, discounts for non-smokers are simply irrelevant. All of Altman's contentions, even in theory, can only apply to the small minority enrolled in individual/small group contracts. For these subscribers, particular market conditions sometimes outweighed the administrative costs, and the discounts were offered.

My February report describes in detail the political and market conditions that led three of the plans in this suit to experiment with non-smoker discounts for specific groups<sup>27</sup>:

<sup>26</sup> Deposition of J. Martin Dickler (April 28, 2000): 221, 223.

<sup>27</sup> Sapolsky Report: 32-4; Deposition of William Eaton (December 3, 1999): 28.

- In Delaware, Blue Cross sought to please the state insurance commissioner, who highly favored wellness programs.
- In Roanoke, Virginia the plan hoped for a marketing advantage against the competing Blue Cross plan in Richmond.
- In Louisiana, the plan was responding to discounts offered by competitors.

I can now add information on the New Jersey plan as well. There discounts were promoted by the state Public Advocate, a public official, and were also being offered by competitors. The assistant actuary for New Jersey Blue Cross who designed the plan, Robert Kelly, was specifically asked in his deposition:

Has Blue Cross and Blue Shield of New Jersey ever made any decisions about differential premiums on the basis of any statements any tobacco company?

He answered: "Not to my knowledge."<sup>28</sup>

None of these plans had any firm actuarial data for setting non-smoking discounts. Their rule of thumb calculations usually came out at around 10 percent. Even after they had instituted the discounts, the plans showed little interest in determining whether smokers actually did have higher utilization or costs.

This is because these were always small, marginal programs. Blue Cross executives did not share Altman's optimism that small economic incentives could change behavior. As Steven Sieverts, the vice president for cost containment programs at Empire (1976-1985) put it, on the question of whether,

paying 10 percent more on a Blue Cross and Blue Shield premium would lead that person to stop smoking, I think... that misunderstands how strongly habituated smokers are and how difficult it is to stop, and they are unlikely to stop for that kind of a relatively minor penalty.<sup>29</sup>

<sup>28</sup> Deposition of Robert A. Kelly (February 15, 2000): 82.

<sup>29</sup> Deposition of Steven Sieverts (March 15, 2000): 264.

Altman also tries to argue that the tobacco industry needed only to influence a few insurance companies, thereby reducing competition for all.<sup>30</sup> But his view of the dynamics of competition is wrong. In a competitive industry, the resistance of one firm to an effective business practice, such as non-smoker discounts, does not stop the other firms from adopting the practice. On the contrary, in such an industry, the first adopters have a competitive advantage that forces all the others to follow quickly or suffer permanent disadvantage.

### WELLNESS PROGRAMS

Altman notes that the tobacco industry opposed smoking restrictions by asking what other individual behaviors might also be subject to similar restrictions. This is true. The Tobacco Institute lobbyist testifying in Wisconsin (see above) argued that "it looks like a new Prohibition era if bills like this are coming in...How about special rates for those with cirrhosis of the liver who don't drink?"<sup>31</sup>

But what Altman does not say is that this "slippery slope" argument was a perfectly legitimate one, made by many health analysts then and now. Steven Sieverts, the Empire Vice President, was asked why his plan did not institute differential premiums. Another of the reasons he cited was:

the difficulty of separating the risks which were caused by one thing from the risks which were caused by something else. Exercise programs, for example, people who exercise vigorously and ski and ride bicycles have a great many orthopedic injuries. Should we charge them more? There are people who are obese, they eat too much. Should we charge them more? Their risk factors are clearly higher.<sup>32</sup>

<sup>30</sup> Altman Supplemental Report: 3.

<sup>31</sup> "Non-Smoker Rate Break Opposed" Milwaukee Journal-Sentinel (September, 14, 1979).

<sup>32</sup> Steven Sieverts Deposition: 267- 268.



Altman further maintains that part of the conspiracy against Blue Cross was the tobacco companies' attempts to shift the focus away from smoking risks by putting them in the broad context of all the other health risks.<sup>33</sup> However Blue Cross needed no such urging for what was clearly in its own business interests.

As described in my February report, Blue Cross anticipated great benefits from "riding the wellness wave" (the phrase is from Ann Morham, the New Jersey Blue Cross director of health promotion, and an anti-smoking activist).<sup>34</sup> In the mid-1970's Blue Cross revenues were squeezed by increasing hospital costs, while at the same time Blue Cross was being blamed for these rising costs by the media and some officials. The national Blue Cross leadership decided to stress the activities individuals could take to improve their own wellness, thus supposedly reducing utilization and eventually reducing costs. To make this political strategy effective, Blue Cross ran a multi-million dollar advertising campaign that stressed as many different health behaviors as possible, to be as relevant to as many Blue Cross subscribers as possible.<sup>35</sup>

Steven Sieverts specifically noted that these health promotion campaigns were run by the public relations or communications offices, not the offices charged with cost containment measures at either Empire or the national association. That is because their main purpose was to enhance Blue Cross's image rather than to save Blue Cross some dollars:

Its primary purpose was as a marketing device, rather than as something that was likely to really manage costs....

we were engaged in active marketing, trying to get people to buy Blue Cross and Blue Shield coverage for their employees or to keep it and not go to somebody else, and to do that we had to not only do things that genuinely were effective, but we had to do things which had the appearance of being effective. The marketplace was demanding visible activities to do something about health care costs. I think the Blue Cross and Blue Shield image was very strong along those lines.<sup>36</sup>

<sup>33</sup> Altman Supplemental Report: 8.

<sup>34</sup> Deposition of Ann Morham (February 24, 2000): 41.

<sup>35</sup> Sapolsky Report: 16-19.

<sup>36</sup> Steven Sieverts Deposition: 309-310; 304-305.

The internal tobacco industry memo that Altman cites, commenting on this advertising campaign, noted ironically that this time "at least there is one consolation in that we are included in a group of items, not singled out."<sup>37</sup> This admission of the tobacco industry's total lack of power vis-a-vis Blue Cross advertising is cited by Altman as evidence of industry pressure on Blue Cross.<sup>38</sup> This interpretation cannot be sustained.

### WORKPLACE RESTRICTIONS

Given that Blue Cross had much skepticism and little data that non-smoking discounts actually reduced much smoking behavior, it is not surprising that they had even less interest in the impact of workplace restrictions on smokers. Altman professes to find a direct link between workplace restrictions, reductions in the amount of smoking, and reductions in the cost of smoking related illnesses.<sup>39</sup> I see far too many questionable assumptions in this chain of logic to credit the outcome he describes.

In fact Blue Cross, with a few exceptions, had little expertise to offer in the area of workplace restrictions. As they struggled to implement smoke-free workplaces in their own offices, they frequently consulted other local employers,<sup>40</sup> and other Blue Cross plans.<sup>41</sup> In any case, this is again an area where tobacco industry executives expressed much concern about the large social changes taking place around them, but were able to do little to prevent them.

<sup>37</sup> Lorillard Letter to Arthur J. Stevens (November 30, 1977). 505197107

<sup>38</sup> Altman Supplemental Report: 8-9.

<sup>39</sup> Altman Supplemental Report: 11-12.

<sup>40</sup> BCBS Florida Memorandum, Karen Tingen, "Proposed change in smoking policy," March 16, 1987. FLA 4011984

<sup>41</sup> Blue Cross Blue Shield National Capital Area Memorandum to Robert L. Cunningham from Diane Watts (January 17, 1989). DC 0040061-63

## THE BOEING INCIDENT

Altman cites an RJR memo to support his contention that the tobacco companies successfully resisted workplace restrictions.<sup>42</sup> In fact the meeting was apparently sought by a Boeing employee who felt discriminated against, because smoking was banned in her plant, while being allowed in other Boeing factories. The memo makes clear that RJR has nothing to offer the employee, not even the protection from losing her job should the protests continue. All the RJR fieldworker could offer her was a referral to the local smokers rights group. But the worker herself noted how futile a response that was:

...she didn't think self-help groups were her idea of effective action. "I don't think I would accomplish much by sitting around the room with other smokers and talking about problems I've got at work" she said.<sup>43</sup>

The suggestions at the end of the memo -- that Boeing executives or congressmen be contacted -- are irrelevant and there is no evidence that they ever happened. Nor is there any evidence of any change in the smoking restrictions at Boeing.

Altman also notes that the Tobacco Institute consulted its law firm, before taking any action, about the legal status of workplace smoking restrictions.<sup>44</sup> First, consulting one's lawyers is not a suspicious act. Second, Altman again misconstrues the point of the memo. The beginning of the memo explicitly explains the barriers to a legal approach: "a private employer's right to restrict smoking by its employees essentially is unlimited."<sup>45</sup> Thus the memo recommended no action at all, unless a company first approached the Tobacco Institute on its own. Read fairly, the memo undermines Altman's thesis.

<sup>42</sup> RJR Memorandum from Mark Smith to Tim Hyde (December 9, 1990). 507678758-62 Cited in Altman Supplemental Report: 14-15.

<sup>43</sup> Ibid.: 3.

<sup>44</sup> Covington and Burling, Memorandum to Katherine Becker, Tobacco Institute (August 31, 1983). *TTMIV* 356949-51. Cited in Altman Supplemental Report: 12-13.

<sup>45</sup> Ibid.: 1. 356949

Altman tries to recast normal business practices as invidious activities. An example of this effort takes place on pages 7 and 13, where Altman objects to the fact that the Tobacco Institute collects newspaper clipping files on issues such as differential premiums and workplace smoking. This is a frivolous point. Most federal agencies, major corporations, and Blue Cross plans keep clippings on issues that are relevant to them. Empire, for example, had a regular, ongoing clipping service, which focused on the "subject of health and anything having to do with Empire," according to Empire Vice President Donald Morchower.<sup>46</sup>

Moreover, the prominence of newspaper clippings in an internal Tobacco Institute memo again reveals weakness rather than strength. The Surgeon General's report indicates that most of the life insurance industry moved to differential premiums en masse. From 1979 to 1982 the number of companies offering non-smoker discounts increased from 30 to 400.<sup>47</sup> Yet in the Tobacco Institute memo, we find that in August of 1982 Institute staffers were still gathering clippings to find out the extent of what was happening.<sup>48</sup> Not only did the Institute have no influence on events, it had missed the boat entirely.

It is true that Philip Morris was particularly sensitive to workplace restrictions on smoking in companies with which it had a long-term business relationship. They were upset, for example, when Aetna instituted such a policy.<sup>49</sup> But what made it particularly frustrating was that Aetna gave them no notice of this change, they had to read about it in the newspaper. Again, rather than revealing the power of the tobacco companies, as Altman would have it, the incident reveals the opposite. Frustrations at Philip Morris had zero impact on Aetna's policies, which remained unchanged.

<sup>46</sup> Deposition of Donald Morchower (June 21, 2000): 53-54.

<sup>47</sup> Surgeon General's Report (1989): 540-1.

<sup>48</sup> Tobacco Institute Report, "Data Collection: Insurance Premium Discounts," (August 1982). *TTMN* 4452713-9, *TTMN* 452772, *TTMN* 452798-807

<sup>49</sup> Philip Morris Memorandum from Fred J. Laux to Hamish Maxwell (October 11, 1985). 2024273870-72

Similarly, there is a memo describing Philip Morris's interest in workplace smoking at Virginia Blue Cross, another long-term supplier.<sup>50</sup> But, in fact, there had been no change in corporate policy, and this memo did not lead to any changes. A year later Virginia Blue Cross did institute smoking restrictions in its buildings, and Philip Morris did not challenge this change.

Altman makes another important omission in describing the industry's workplace initiatives. A memo specifically describes how the Tobacco Institute brought in an experienced human relations officer as a consultant, to help them improve their workplace smoking program.<sup>51</sup> This was Robert Cunningham, then the vice president of Blue Cross for the National Capital Area (Washington D.C.). The Institute was very pleased to have his advice:

Robert L. Cunningham, Vice President of Human Resources and Facilities for Blue Cross and Blue Shield, has more than 20 years of experience in employee relations. In fact, he is a member of the audience that TI targets when trying to inform the corporate community....<sup>52</sup>

Mr. Cunningham had just established stringent limitations on smoking in the offices of his Blue Cross plan.<sup>53</sup> Surely he would not have been assisting a Tobacco Institute program which he thought was adverse to Blue Cross's interests. This document was included in Altman's collection, but is not cited in his supplemental report.

#### BROCHURES

Yet another memo concerns a meeting between Tobacco Institute researchers and staff at the Metropolitan Life Insurance Company in 1963. Altman's contention is that this was part of a pressure campaign. The full text of the memo clearly describes a convivial lunch for all

<sup>50</sup> Philip Morris Memorandum from W. K. Pember to S. C. Darrah (March 13, 1991). 2021205334-5

<sup>51</sup> Tobacco Institute, Corporate Assistance Program Evaluation (1990). 87698450-55

<sup>52</sup> Ibid.: 4. 87698453

<sup>53</sup> BCBSNCA Memorandum, Cunningham to Struck, July 7, 1989. DC 0040064.

concerned.<sup>54</sup> First of all, the main participant for Metropolitan was their chief actuary, Edward Lew. He had a major reputation in this field, and the tobacco researchers had no leverage for pressuring him even if they had sought to, which they did not.

Lew told the tobacco researchers he had also been in contact with the committee then preparing the first Surgeon General's report, and with E. Cuyler Hammond of the American Cancer Society. (Lew would later become a contributor to the ACS studies on smoking and lung cancer.) Lew said that he agreed with some positions taken by the tobacco industry, but also spoke disparagingly of advertising 'aimed at teenagers.'<sup>55</sup> In the midst of this discussion, the group was shown the draft text of a new Metropolitan brochure. Lew agreed to change the wording of one sentence to better reflect his own views. He ended the meeting agreeing "enthusiastically to participate in any future conferences that we have on clinical research and to help in any other way. He was most cordial and friendly..."<sup>56</sup> Nor was this the only such meeting. The Altman collection includes a letter dating to 1955, which records a similar friendly lunch between Lew and other tobacco industry researchers.<sup>57</sup>

#### PHILIP MORRIS/CIGNA

It is true that for several years in the mid-1990's Philip Morris staff members deleted anti-smoking messages from CIGNA newsletters sent to Philip Morris employees. In her deposition, Lisa Halle testified that she did this because Philip Morris employees often reacted negatively to anti-smoking messages, which they took to be a threat to their own jobs.<sup>58</sup> But these deletions appeared only in CIGNA newsletters meant exclusively for Philip Morris

<sup>54</sup> Tobacco Institute Memorandum "Luncheon Meeting with Edward A. Lew" (June 17, 1963). 11309238-9

<sup>55</sup> Ibid.: 1. 1130928

<sup>56</sup> Ibid.: 2. 1130929

<sup>57</sup> Tobacco Institute, Letter from Robert C. Hockett to Edward Lew (February 10, 1955). HK 2401926

<sup>58</sup> Deposition of Lisa Halle (March 21, 2000): 36.

employees. No changes were made in any other CIGNA newsletters sent out nationwide. The relationship between Philip Morris, its own health insurer, and its own employees has no bearing on a supposed industry wide attempt to coerce Blue Cross Plans.

### PREPARING FOR FEDERAL LEGISLATION

Altman's final claim is that the Tobacco Institute, in an internal memo, proposed more research to better present its options during the next round of discussions over national health insurance.<sup>59</sup> This behavior is no more suspicious than the other items discussed above.

However it does suggest one more parallel between the tobacco industry and Blue Cross. Blue Cross national President Walter McNerney devoted considerable time and attention in his annual reports of the early 1970s to the topic of preparing Blue Cross for national health insurance.<sup>60</sup> Indeed, one of Stuart Altman's duties as personal consultant to McNerney was to provide advice on upcoming state and federal legislative initiatives.<sup>61</sup> I see nothing to distinguish these activities from those described in the Tobacco Institute memos.

### CONCLUSIONS

In his deposition, Altman acknowledged that he had no evidence that the purported activities of the tobacco companies had actually produced any impact on Blue Cross.<sup>62</sup> Thus the main theme of his report lies undemonstrated. There was no fraud. And none is shown.

Yet Altman's fallback claim, that there was a consistent coordinated pressure campaign, is not supported by the evidence in his paper either. As I have shown, many of his examples are based on memos taken out of context, which actually demonstrate the lack of impact when

<sup>59</sup> Altman Supplemental Report: 19-20.

<sup>60</sup> Walter J McNerney, "President's Report, Part II" (April 13, 1972). BCBSA 13678-94

<sup>61</sup> Altman Deposition: 55-60.

<sup>62</sup> Altman Deposition: 176-184; 194-221; 234-241.

fairly construed. The rest are normal business practices, often engaged in as much by Blue Cross as by tobacco companies.

The history reflected in these documents shows that the tobacco industry was unable to stem the tide of life insurance discounts, even within their own insurance subsidiaries. Nor did they have much influence over the trends regarding workplace smoking, which in any case have little to do with Blue Cross.

Blue Cross, in contrast, implemented health promotion and wellness campaigns, and sometimes non-smoking discounts when, and only when, it suited their own business calculations. Steven Sievert's description of the reasoning at Empire Blue Cross makes this clear. There is still no evidence that the tobacco industry had any impact on the business behavior of Blue Cross plans, whether at Empire or anywhere else.

I reserve the right to further supplement my reports as new information becomes available.

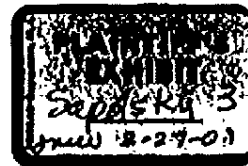


*Harvey M. Sapolsky*

Harvey M. Sapolsky

February 6, 2001

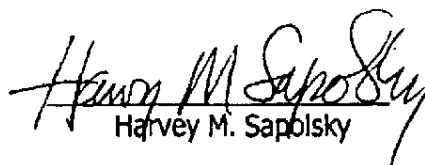
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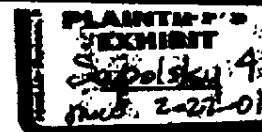


Supplemental Statement of Harvey M. Sapolsky

I am a professor of Public Policy and organization in the Political Science Department at the Massachusetts Institute of Technology. My qualifications are described in my report of February 17, 2000, and the attached curriculum vitae.

I have reviewed the expert report submitted by Professor Richard Semenik and the statistical analysis of the subscriber depositions taken in this action. In my view Professor Semenik's report and the statistical analysis support my opinion that the knowledge of the health risks of smoking, including its addictive nature, was widespread.

  
Harvey M. Sapolsky



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# CONSUMING FEARS

THE POLITICS OF  
PRODUCT RISKS

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Harvey M. Sapolsky  
EDITOR (MIT)

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in

Basic Books, Inc., Publishers

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# CONSUMING FEARS

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# Chapter 1

## Introduction

HARVEY M. SAPOLSKY

Americans live in fear. Our economy is in jeopardy, our nights are given over to criminals, our armed forces are ever on alert—even our consumer products can no longer be trusted. Every day, it seems, we learn that another food or common convenience has turned against us, having been identified as a health risk. The Tylenol madness aside, there is hardly an item on the supermarket shelf that is not thought to pose a danger of some sort.

The dangers are not trivial. Frequently used products have been linked to a multitude of diseases that kill or disable. Coffee may cause pancreatic cancer, eggs atherosclerosis, and aluminum pots Alzheimer's disease. Peanut-based products can contain aflatoxin, a powerful carcinogen; some hair dryers may release asbestos fibers that, if inhaled, can produce asbestosis, a deadly lung ailment. This morning's corn flakes may contain hazardous amounts of the pesticide EDB. Tonight's aspirin promises relief, but also the possibility of an ulcer in the not-too-distant future. We are told that our life chances depend upon how wisely we choose among the array of goods available to us. We are, it is said, the victims of what we eat, drink, and breathe, as well as of our genes.

The problem, though, is to choose wisely, because the risks for most product groups are not well defined. Simply because animals fed a steady diet of peanut butter or Red Dye No. 3 (with or without the cherries) may be found to develop tumors does not mean that humans who include those items in their diets will necessarily develop tumors. Nor does an epidemiological finding that those who take just a nip or two of scotch each day seem immune from early heart attacks offer much comfort because there

may be some confounding factor such as dietary habits or level of exercise that was unexplored in the study, but that actually provides the immunity. In most instances where products are challenged, there are counterstudies that appear to exonerate them. The debate over the validity of the various studies is usually intense and, more than occasionally, confusing.

If life is hazardous for consumers, it is hazardous for at least some producers as well. Successful products, thought to be safe as well as profitable, can suddenly stand accused of causing disease. Rarely is the link to ill health unambiguously established. Manufacturers must then decide whether to defend or abandon the tainted, but perhaps guiltless product. The special skills of advertising agencies, liability lawyers, and Washington lobbyists can, for a price, be quickly organized to defend the manufacturer's interest, but there is no guarantee that they can restore confidence in a product's safety once it is questioned. Like consumers, manufacturers must choose among risks.<sup>1</sup>

### Finding a Perspective

The continuing cascade of consumer product controversies—by our count at least a dozen new ones are begun each year—has generated much interest and some analysis. The serious research seems to be divided into two categories: reports that analyze risk from the perspective of the individual, and reports that take a societal perspective. Neither approach quite satisfies.

Studies of individual perceptions of product risks attempt to understand why consumers fear some risks more than others.<sup>2</sup> Much attention is directed toward identifying the specific factors that influence the fears consumers hold. Is the risk exposure assumed voluntarily? Is the exposure thought to be controllable? Are the consequences of exposure especially dreaded? How certain are the consequences? Questionnaires allow risk perceptions to be measured and compared along these and similar dimensions. Judging by their survey responses, people apparently have less fear of hurtling down a mountain with their feet attached to two thin boards than they have of drinking their favorite beverage, which may be laced with an additive that has some unknown potential for causing cancer in twenty or thirty years. But it is unclear how much these stated perceptions of risk actually affect behavior. Would any skier really cringe at the prospect of a fall or a soft drink in the lodge after a run? Or has it become

socially expected to *express* fear of some risks, but not others? Studies of risk perceptions do not reveal very much about the mobilization against certain products by abstainers. What factors sustain the concern about products when the supposed risks are assumed voluntarily and thus can be controlled by the individual consumer?

The second category of product risk studies takes a societal perspective. Such studies concentrate on improving the *management* of risk by society.<sup>3</sup> Various approaches for identifying and ranking the risks of common products and activities have been proposed. Alternative schemes for regulating risks have been devised. These are essentially efforts to rationalize the often confusing and conflicting processes by which society currently deals with common risks so as to calm public fears. The problem with this approach is that the concern for risk may not be easily assuaged. What set of governmental actions can fulfill the quest for immortality or assure a risk-free society? Is it not possible that the more attention paid to risks, the more fears of exposure are increased? Certainly improvements in safety, even if achievable, provide no guarantee that consumers will feel more comfortable with the remaining risks.

The crucial limitation in both perspectives is that they ignore the fact that our political and economic lives are shaped by organizations. It is not society that regulates risks, but rather specific government agencies, each with its own legislative history, ambitions, and guiding professional values. It is not the consumer who identifies the existence of risk, but rather the news media, public interest groups, businesses, and scientific organizations—all subject to the pressures exerted by rivals and their own desire for perpetuation. Although society and individuals suffer the consequences of exposure to product risks, the risks themselves are certified, evaluated, heralded, and prescribed for by organizations whose vision is always less than that of society, and whose interests are different from those represented by the aggregate of their members' interests.

An important exception to the general failure to consider the organizational perspective on risk is Mary Douglas and Aaron Wildavsky's *Risk and Culture*, an analysis of the concern over environmental hazards.<sup>4</sup> Douglas and Wildavsky describe the development of a sectarian culture in America that is extremely hostile to industry, especially large corporations. Through a network of activist organizations, the members of this culture protest the existence of environmental hazards in order to undermine the political and economic power of industry. The hazards that they choose to protest are those that most implicate large corporations. Convinced of the moral purity of their cause, the leadership of these activist organizations invariably describe the environmental dangers in apolitical terms. The world

## CONSUMING FEARS

as we know it will end unless this risk is eliminated. No doubt Douglas and Wildavsky would argue that this culture is at the core of the controversies that we examine here, and that product risks are merely an extension of the pollution risks challenged by this anti-industry movement.

Such a conspiratorial perspective, even one that recognizes the role organizations play in the development of product fears, gives one pause. To begin with, there is a danger of focusing too much on the strange and wonderful beliefs of a minority while ignoring the beliefs of the majority. We are, after all, interested in explaining why most Americans fear their consumer products, not why some have real or imagined grievances against particular products or producers.

The fluoridation controversy, in which many communities voted to reject the addition of fluoride compounds to the public water supply to reduce dental caries, provides an example of this problem.<sup>3</sup> The most frequently offered explanation for the rejection of this public health initiative was that voters, in turning down fluoridation, were expressing their alienation from big government and the mass society of post-World War II America. Because all social science commentators thought fluoridation was a rational policy, there was a need to explain its consistent rejection by the voters, and alienation is the standard sociological explanation for irrational social behavior. To be sure, alienation was obvious in the views of those who led campaigns against fluoridation. (Recall General Jack D. Ripper's concern for fluoridation's effects on his "bodily fluids" in the movie *Dr. Strangelove*.) But when the campaigns themselves are examined, one is struck by the contradictory evidence about the health consequences of fluoridation presented to the voters by those with apparently appropriate and valid scientific credentials who were marshaled on both sides of the dispute. Although most physicians and dentists supported fluoridation, in nearly every local referendum there were some who did not. Several government agencies, including the National Institutes of Health and the National Science Foundation, publicly endorsed the safety of fluoridation, but the National Nutrition Foundation, a private organization with an official-sounding name, was prominent in the fight against its adoption. Instead of being alienated, most voters were likely confused by the campaign and chose the safest course by rejecting fluoridation. The alienation of the antifluoridation leaders was largely irrelevant to the outcome.

The standard explanation also tends to ignore the counterstrategies of those the activists attack. In the fluoridation controversy, public health officials used to debate the antifluoridationists as a matter of policy, not wishing to legitimize their opponents' standing as experts by appearing on

## Introduction

the same public platforms. In their view, the antifluoridationists were no more than scientific quacks, unworthy of direct answer. But because voters are conditioned to expect representation by both sides in a referendum, and grow suspicious of attempts to suppress such representation, the strategy of the public health officials was self-defeating.

We share Douglas and Wildavsky's belief in the importance of examining the organizational dimension of risk controversies, but we disagree with their conclusion in *Risk and Culture* that one type of organizational culture determines the course of these controversies. It seems to us that it is the interaction of organizations that makes politics. It is the effect of this interaction in a particular set of controversies that we seek to describe.

Product risk controversies, we believe, are materially shaped by the maintenance needs of organizations, not all of which have a direct financial or policy interest in the outcomes of these controversies. No matter what their stated purpose is, organizations seek to survive and prosper. Product risks represent opportunities to some organizations and threats to others, independent of the effects on human health. The ways government agencies, professional associations, business firms, and other organizations involved in product risk controversies react to these opportunities and threats determine the dynamics of the controversies. In turn, the dynamics of these controversies significantly affect the public's understanding of health risks, an understanding that is unburdened by much independent factual knowledge.<sup>4</sup>

Our book will not tell anyone which risks to accept and which to avoid. We claim no special medical or technical expertise. No doubt we are as squeamish about what we consume as are the rest of today's Americans. Our intent is to explain the origins and development of product risk controversies, identify their common features, and provide a perspective on the processes by which product fears have become so much a part of our lives. Given the near panic that greets the discovery of each new risk, some solace is needed, if only that of understanding the causes of our national predicament.

## Background Factors

The temptation in studying societal concerns is to search for a precipitating event, an incident that can be credited with giving rise to a set of public attitudes that become self-perpetuating. One might cite the 1963 report by

Memorial Sloan-Kettering Cancer Center investigators linking cigarette tars to cancer or the 1954 popularization of this work and some related epidemiological studies in *Reader's Digest*, the nation's best-selling magazine.<sup>7</sup> There is no doubt that these events profoundly affected the public's perceptions of the risks of smoking cigarettes, one of the most commonly used consumer products. Yet, it is also true that reports linking cigarettes to disease, including cancer, appeared not infrequently during the preceding half-century.<sup>8</sup> Apparently, the social environment has much to do with the degree of attention paid to events. We have identified four background factors that appear to have facilitated the growing public concern about the health risks of consumer products. They are (1) a change in the leading causes of death; (2) improvements in scientific methodologies; (3) an increase in the level of national affluence; and (4) a change in the population of national organizations.

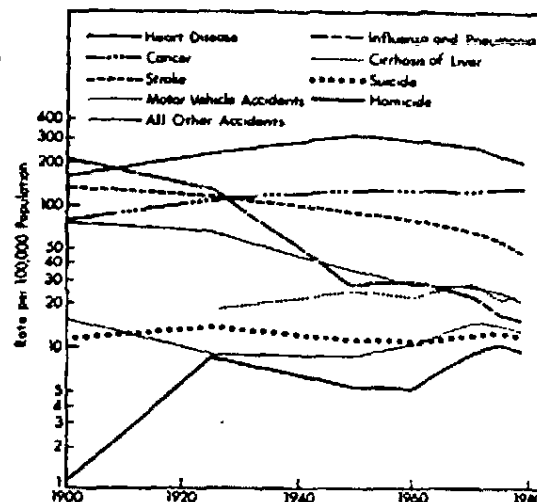
#### HEART DISEASE, CANCER, AND LITTLE ELSE

Vital statistics make heartening reading. In 1900 the average life expectancy for Americans was 47.3 years. By 1950 the average had improved to 68.2 years; today it is 74.7, giving promise of several years of retirement for most. We now live longer, healthier lives than did our forebears.<sup>9</sup>

Significant improvements in life expectancy have come about in two major waves, one at the beginning of the twentieth century and another more recently. During the initial decades of the century, we learned to cope with at least some of the ills accompanying industrialization and urbanization. In 1900 the leading causes of death in the United States were infectious diseases, specifically influenza, pneumonia, and tuberculosis, which continuously culled the population and which thrived in the crowded conditions of factories and cities.<sup>10</sup> Due primarily to improvements in public sanitation, but also to the development of effective therapies, the infectious diseases were gradually brought under control, although not quite eliminated. By the 1930s heart disease, stroke, and cancer had replaced infectious diseases as the leading causes of death. (See figure 1.1) For males the risk of dying of heart disease nearly tripled and for females it doubled between 1920, when the rate began to accelerate significantly, and 1950, when it peaked. Worse yet, there was a parallel increase in cancer deaths, especially lung cancer, whose rate more than quadrupled.

Taken together, cardiovascular disease and cancer came to account for well over half of the nation's deaths. Not surprisingly, when the significance of the increase in chronic disease was recognized, health officials thought they faced a problem of epidemic proportions. By the late

FIGURE 1.1



Trends in Age-Adjusted Death Rates from Selected Causes: Selected Years, 1900-78

NOTE: The selected years are 1900, 1925, 1950, 1960, 1970, 1975, and 1978. SOURCES: Department of Health and Human Services, *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*, 1979; National Center for Health Statistics, *Special Report on Diabetes*, vol. 43, no. 12, 1956; National Center for Health Statistics, *Vital Statistics Special Report*, vol. 43, no. 3, 1956.

1940s the puzzle over the cause of heart and cancer deaths was at the top of the scientific agenda.

Various explanations were proposed, most centering on dietary and behavioral factors. The twentieth century brought improvements in sanitation and medicine, but it also brought alterations in diet, and processed foods and additives, with unknown consequences. Per capita income and quality of housing increased, but so did the prevalence of smoking and the exposure to agricultural and industrial chemicals. The suspicion was that hidden in the good news was the bad.

Important new gains in longevity for Americans began in the 1950s. Recent improvements in health status have been across a broad front. We have been getting healthier and healthier. Infant and maternal death rates



have declined. So have accidental deaths, including the most common form of all, those related to motor vehicles. Even some types of cancers have decreased—stomach and liver, for example. But given its importance in the overall death rates, the more than 20 percent reduction in cardiovascular deaths over the last two decades is most significant.

The fact that heart disease and stroke are declining gives little comfort to the many who are still prematurely stricken. The questions for science then become: What has caused the unexpected and continuing decline in cardiovascular deaths? and how can it be encouraged? Some investigators believe the decline is due to the adoption of preventive measures such as changes in diet, increased exercise, and quitting cigarette smoking. Others attribute the decrease to improvements in medical and surgical therapies. Still others argue that control of hypertension is the cause. Unresolved, the debate draws increased attention.<sup>11</sup>

The quest to understand cancer is at least as intense as that for cardiovascular disease. Here too the speculation about links to diet and behavior remains strong.<sup>12</sup> The identification of potentially hazardous products raises doubts about the safety of other man-made products. Once human beings ignorantly caused death with dirty water and hands. The fear is that humans are at fault again.

#### ONE IN A BILLION

Somewhere amidst the hundreds of thousands of deaths occurring each year lies the answer to the real causes of changing death rates. Different scientific disciplines approach the same problem differently. Epidemiology seeks insights from the experience of large populations. Pathology looks at the results in individual cases. Biology uses experiments to understand fundamental processes within living systems. But all depend on precise measurement.

Precision is hardest for the epidemiologists because they must often recreate human experience through fragmented records or faulty memories. Vital statistics are maintained in different ways in different jurisdictions—variations in definitions and completeness occur frequently. When public surveys are undertaken, it is discovered that people have difficulty in recalling accurately products and quantities consumed. But public health record systems have improved gradually with the recognition that medical histories might hold clues as to the causes of diseases. Moreover, epidemiologists have become skilled at utilizing established institutions to enhance the completeness and reliability of their data. For example, leading postwar epidemiological studies that linked cigarette smoking to lung

cancer were ingenious in their use of available resources. E. C. Hammond mobilized the volunteer network of the American Cancer Society to collect his data; Richard Doll decided to study British physicians because of the likelihood that they would be cooperative and responsible respondents.<sup>13</sup>

The improvement in experimental techniques is even more impressive. Increased support for research has permitted the development and maintenance of large colonies of specially bred animals for laboratory experiments. Data processing advances allow easy manipulation of vast quantities of research information. And progress in the technology of scientific instrumentation has made routine the identification of one part per billion in chemical analyses—the equivalent of measuring one second in a period of thirty-three years.<sup>14</sup> All this has meant that during the years since World War II there has been a substantial increase in the capability of science to ferret out health risks, the small as well as the large.

Advances in detection capabilities help in the constant search for potential hazards in consumer products. What was once considered safe and commonplace can become viewed as dangerous when instruments are sensitive enough to detect minute quantities of potentially harmful elements. Lead additives for gasoline were developed in the 1920s as the solution to the persistent knocking problems of high-compression automobile engines. Serious health effects were soon noticed in those working closely with the additives, arousing fears for the safety of the public. In 1924 an accident in a New Jersey processing plant killed five workers and hospitalized thirty-five others due to lead poisoning. That same year, New York City imposed a temporary ban on the manufacture, sale, and use of leaded gasoline. Despite these events, a 1925 survey by the staff of the Surgeon General and a panel of expert consultants failed to find a clear public risk associated with leaded gasoline.<sup>15</sup> Manufacturing safety was improved, and leaded gasoline became the national standard. Only with the precise measurement in the 1970s of the dispersion of lead by-products of combustion into the atmosphere was the risk better defined. Engines were required to be redesigned in order to eliminate the use of leaded gasoline and have been sputtering ever since.<sup>16</sup> The hazard of lead, fully revealed, takes precedence over automobile performance.

The line of defense against the dangers of everyday living was thin a half-century ago. There was little else besides a federal poison squad—a group of young volunteers to sample foods—and a handful of industrial test laboratories. Today, an army of investigators ponder what we eat, drink, or use. The federal agencies include the Food and Drug Administration, the National Institutes of Health, the Environmental Protection

## CONSUMING FEARS

Agency, the Consumer Products Safety Commission, and a half-dozen others with similar responsibilities.<sup>17</sup> State governments duplicate many of the federal activities, although on a less lavish scale. Hundreds of private laboratories stand ready to contract with governments and firms for product safety tests. Many millions of animals are sacrificed each year in the United States in an unending quest for improvements in human health.

What can be measured will be measured. The law often mandates it. The curiosity of scientists encourages it. And the possibility of a liability suit makes it unwise not to.

## IF YOU HAVE YOUR HEALTH, YOU HAVE EVERYTHING

Aaron Wildavsky has reminded us that richer is healthier.<sup>18</sup> Affluent societies are healthier than are poverty-stricken ones. Wealthy people tend to be healthier than poor people. America grew richer during the twentieth century and, as we have seen, its people came to live longer, healthier lives. When per capita income increases, diet, education, and access to medical care—all factors related to good health—generally improve as well. Within a society the groups that lag in income lag in health status too.

But the rich worry more about their health. When bread is not an issue, jam is; when basic needs are met, there are other things to fret about. Although many may try, good health cannot be purchased. It matters not to the rich that as a class they are healthier, for eventually we all must die. The great desire to avoid this fate is understandable, especially when most or all other desires are fulfillable. After all, as the cliché goes, when you have your health, you have everything.

There is another way to view the effect of affluence on attitudes toward health. Joseph Schumpeter, an Austrian-educated economist who taught at Harvard, predicted in 1942 that capitalist societies (the only affluent societies, in his scheme) would be transformed by their own success.<sup>19</sup> Only these societies, he argued, could afford to create a large number of highly educated young people who would strive to rationalize all aspects of life, including the entrepreneurial underpinnings of capitalism. Later social theorists have built upon his insight to argue that this group of educated dissidents constitute a new political class whose interests are antagonistic toward business because they find employment in the staffs of social service, regulatory, and other agencies which depend on public sector expansion.<sup>20</sup>

One does not have to accept completely the "new class" argument to recognize that there are political implications in the recent rapid growth in the medical, legal, and government service professions. And physicians,

## Introduction

lawyers, and policy analysts need not gain personally from restrictions on corporate behavior to be concerned about the health consequences of products. These professionals are probably most aware of products that pose health threats and most knowledgeable about procedures to control these products. They are identical in terms of education and income with those segments of the population that are most interested in environmental preservation, physical fitness, and nutrition.<sup>21</sup> They heed the product labels that they cause to be written. In essence, they constitute a market for bad news about products, a market that, because of its affluence and position, wields influence over both the producers of consumer goods and politicians.

## NADER'S INNOVATION

Joseph Schumpeter studied entrepreneurial behavior because he believed that he saw in it the engine of economic progress. Entrepreneurs, he argued, accepted the risks of innovation in the hope of having one day the mansion on the hill, the fortune of a Ford, a Woolworth, or a Rockefeller. The success of one entrepreneur encourages others to follow. Soon there is a herd, copying and refining the innovation until it is commonplace and vulnerable to another innovation promoted by another entrepreneur. Another herd of copiers and refiners follows. Economic progress, it seemed to Schumpeter, was the sum of these successive waves of "creative destruction."

But, as Schumpeter also envisioned, not all empires in capitalist societies need be economic. Depending upon social conditions, empires can be built in nearly every field. Consider the legacies of bureaucratic entrepreneurs such as J. Edgar Hoover, Robert Moses, and Hyman Rickover. These men saw opportunities for change in government where others did not and, although they did not necessarily create personal fortunes, they left behind impressive organizational monuments—the Federal Bureau of Investigation, the New York state parkway system, the Navy's nuclear propulsion program—in testimony to their willingness to undertake the risks of innovation.

Surely, one of the most important political innovations in recent years has been the formation of public interest groups, reform organizations that claim a disinterested but analytical approach to public policy issues. As the federal government expanded during the twentieth century, various interests organized on a national scale to influence its policies.<sup>22</sup> The obstacles to organization have not been great enough to prevent business people, trade unionists, and professionals of nearly every description to form

associations and to gain effective Washington representation.<sup>23</sup> But not until Ralph Nader outmaneuvered the admittedly inept General Motors Corporation in the early 1960s on the automobile safety issue did the nation discover political influence was also available to those who did not bother or were initially unable to assemble an actual membership base for their activities.

Nader recognized that a constituency existed for his ideas and that the news media would mobilize it for him when it was needed. The civil rights movement had trained Americans to appreciate the necessity of public protests to obtain morally desirable ends. Years of affluence had created a generation of educated youth who sought public-spirited commitments to replace the materialistic goals their parents had so compromisingly pursued. It was Nader's genius to appeal to this generation by attacking the failings of established institutions, using a mixture of moral protest and policy analysis. With these techniques of advocacy research, he attacked corporations and government agencies in particular. Moral protest was necessary to demonstrate commitment, but the claim of factual evidence was also required to satisfy the prevailing levels of sophistication and education. The David versus Goliath image evoked by Nader's initial battle with General Motors served his cause well because it provided the news media with an easily understandable format for presenting the many complex policy disputes Nader's actions involved. That battle, through a legal settlement, also helped finance a network of public interest organizations that Nader founded.<sup>24</sup>

Dozens followed Nader's example, some of whom he trained, others learning effective strategies on their own in the antiwar, antipoverty, or environmental conservation movements. The organizations they established drew sustenance from foundations and government grants and gained a strangely establishmentarian permanency in our political life. What the Left pioneered, the Right copied, ensuring that conservative perspectives were well represented in the burgeoning public interest movement.<sup>25</sup> There is now hardly a topic of political concern that has not been claimed by one or more organizations asserting to represent the public interest.

The growth in public interest groups has coincided with (and surely has contributed to) a precipitous decline in the public's confidence in government and business. Of course, vivid exposure of official deceit in Vietnam, Watergate, and Three Mile Island were central to the erosion of confidence, as was a chronically weak economy, but the mundane targets of the public interest groups, one's beer or breakfast, made everyday experience yet

another source of anxiety. Since the mid-1960s Americans have expressed increasing distrust in politicians, federal officials, and corporate executives—indeed, a substantial majority now report that they have no faith in the honesty of these representatives of business and government.<sup>26</sup> Instead, trust is placed in those who purport to be above interest and who seek to expose the failings of society's special interests, which in the popular perception includes government as well as business.<sup>27</sup> With the creditability of the certifiers and purveyors of goods in question, it is no wonder that Americans fear their consumer products.

### Making Our Choices

The case studies that follow show how nurturing American society has been for product fears. They describe the origins and development of six product risk controversies, none of which has been fully resolved. The organizations involved in the controversies, like the products themselves, are familiar ones, common household names once trusted but now much less so. How their fears shape ours is an important comparative theme. It is through their promotion and suppression of risks that we learn what hazards lurk in our lives.

In any comparative study the choice of subjects is crucial to the success of the effort. We wanted our selection of cases to be representative of all product controversies, but realized that the number of potentially important variations among them would be too great. We wanted to include cases involving big hazards as well as small, but knew that we could not be certain of the true dangers posed by any product because they are continually being redefined. We thought controversies of a more recent origin could be affected by the accumulation of past ones, yet could not predict the magnitude of the impact. Like consumers, we found risks in every choice.

We selected cigarettes, dairy and meat products, salt, artificial sweeteners, tampons, and urea-formaldehyde insulation. Two of these—cigarettes and dairy products—the Surgeon General in all his recent incarnations has warned us about. Cigarettes are implicated in a number of diseases, especially heart disease and cancer. Dairy and meat products, laden with saturated fats, are thought to be linked to atherosclerosis. Both cigarette smoking and dairy and meat products are issues with relatively long histories,

beginning in a serious manner in the 1940s. The controversies involving salt and artificial sweeteners, in contrast, have been with us for only the last fifteen years. Salt has been linked to hypertension, which in turn is linked to heart attacks, strokes, and kidney failure. Cyclamate and saccharin, two of the more prominent artificial sweeteners, are believed by some experts to be carcinogenic. A third sweetener, aspartame, has just reached the market, but already is suspected to be a cause of illness. Recently, with the identification of the toxic shock syndrome, one brand of tampons was withdrawn from sale and others of similar formulation were placed under suspicion. Consumers have lodged a long series of health complaints, especially respiratory ailments, against urea-formaldehyde foam. Worse still, formaldehyde, a key component of the insulation product as well as many others, is now thought to be a potential carcinogen.

These products differ significantly in risk and their precise health effects are not known. Surely, though, cigarettes must be considered to be the most hazardous of the lot. Estimates of the annual toll of premature deaths in the United States due to smoking range from 300,000 to 500,000. Some say that if serum cholesterol levels can be reduced only by 10 percent with decreased consumption of meat and dairy products, the coronary death rate would fall by one third, a savings of several hundred thousand lives each year. Gains potentially achievable by reduced sodium intake are less dramatic, but hardly trivial given the prevalence of hypertension in the American population. Perhaps tens of thousands of deaths due to diseases of the circulatory system could be avoided by the careful management of hypertension through a combination of dietary change and drugs.

At our present state of knowledge, the other products examined have to be considered minor risks. Saccharin has been linked to bladder cancer, but this form of cancer accounts for less than 11,000 deaths each year in the United States, and not all of them, or even any, may be due to the use of this artificial sweetener. Toxic shock frightens many, but very few are stricken. All of us are exposed to formaldehyde at some level because it is such a widely used chemical. Whether or not the exposure is detrimental to our health remains to be determined. Thus, the rank order of risk appears to run from cigarettes to urea-formaldehyde. It is in this order that the cases are presented.

The cigarette controversy in many ways is the precedent-setting case. Epidemiology, it is said, matured as a science in the search for the health effects of cigarette smoking. Many of the types of regulations now proposed for suspect products, health warning labels and advertising restrictions for instance, were first established for cigarettes. Attempts by industry to diffuse product controversies and adjust marketing strategies to

assuage health concerns are strikingly visible in the cigarette case. And yet, there are unique features of this controversy. No other product has such committed opponents as does the cigarette. And no other set of producers have weathered their travails as successfully as have the cigarette producers. Cigarettes, however, may well be at an important turning point—good fortune may be shifting from the product's defenders to the product's critics.

A central feature in all the controversies is the struggle among interested groups to control governmental agendas. In the dietary fats case, the relevant policies are the government's nutrition guidelines. Although the scientific debate over the health consequences of cholesterol continues, advocates of dietary changes to reduce cholesterol levels have enjoyed recent success in gaining governmental endorsement of their views, but not without arousing the ire of others. As Janet Levine reports, even industries that would benefit from reductions in the public's consumption of dietary fats are not anxious to have the government intervene in the issue. The analysis of this strong preference for a market decision in dietary matters reveals contrasting business strategies for dealing with the growing concern over the health risks of cholesterol.

Salt, despite evidence that its dietary use is linked to serious illness, has more often been a hapless pawn in political and scientific disputes rather than the primary issue under scrutiny. For most affected by its potential regulation, including even the salt producers, it is the classic secondary issue. Nevertheless, there are moments when the convergence of interests forces salt to center stage. In the salt case, Mark Segal explores the pressures that drive congressional committees, health and trade associations, regulatory agencies, and firms to claim a substantial stake in what would be an otherwise minor issue.

The artificial sweetener case prepared by Linda Cummings focuses on the dilemmas of a regulatory agency trying to cope with the hazards of consumer products. Three times in the last fifteen years the Food and Drug Administration has attempted to decide the fate of an artificial sweetener and three times it has provoked a storm of protest for its efforts. The agency's problem lies in the public's contradictory interest in the challenged products; for some consumers the desire is for absolute protection while for others it is for the freedom of choice. Cummings analyzes the efforts to mobilize consumers for one or the other of these positions and describes the trials of an agency having to play a politicized role of market arbitrator when its preferred role is that of neutral recorder of scientific consensus.

Sanford Weiner notes in his analysis of the tampon controversy that

public health surveillance systems now have the capacity to detect risks at a prevalence of fifty cases per 240 million population. Although few in number, the identification of toxic shock victims caused near national panic. State health officials and individual researchers, not always unwillingly, were thrust into the media spotlight to offer advice as the federal government and the tampon manufacturers struggled to decide upon a course of action. Weiner examines the defensibility of the action taken under the pressures of the moment.

Organizations are primed to react to very specific types of information. For some it is reports of a new disease. For others it is the suspicion that a product is carcinogenic. As the urea-formaldehyde case illustrates, consumer complaints about the health effects of exposure to the product provoked little regulatory activity because they were insufficiently dramatic. Enterprising state officials and health activists may wish to intervene, but they need a galvanizing medical finding to gain a wide hearing. According to Sanford Weiner who also prepared this case, the chance discovery by an industry group that formaldehyde could produce cancer in laboratory animals was such a finding. Regulatory agencies and trade associations uninterested in the fate of the home insulation material or its consumers had well-established positions to defend when this cancer link was reported. The subsequent policy debate has ensnared many additional products because of formaldehyde's ubiquitous uses and promises to allow everyone to reiterate opinions about appropriate standards for the regulation of potential carcinogens.

Our research strategy was straightforward if not especially elegant. We interviewed those expected or reported to be knowledgeable about the controversies. We dug through the records and read the news accounts. We decided early on to let each case be analyzed on its own terms rather than to impose a standard format on such diverse situations. Periodic reviews of our common progress allowed identification of common themes and a sharing of insights. A concluding chapter brings together the general findings, but each case offers its own lessons as well.

## Chapter 2

# The Changing Politics of Cigarette Smoking

HARVEY M. SAPOLSKY

Cigarette manufacturing is surely the most resilient of business turn of the century when cigarette smoking was first become the United States, the Women's Christian Temperance Union principals who were worried about the decay of public morality, cigar manufacturers who were worried about competition in having fourteen states ban the production, advertisement cigarettes. These laws proved ineffectual because cigarette already become a symbol of maturity, sensuality, and modern Americans. Consumption boomed. The laws were quietly

After experiencing growth for three decades, the cigarette hit hard by the onset of the Great Depression. Several years demand and competitive price cutting followed. But economic and war spurred consumption. Soldiers received cigarettes in rations for their own use or trade. Even after price cutting ceased, the cost of cigarettes remained relatively low because of the large domestic production of tobacco and moderate taxation of cigarettes. By 1953, cigarette sales were over three times what they had been in 1929. More than half of adult males and about a quarter of adult females smoked.

Then came the first of the smoking and health scares, the release of epidemiological studies linking cigarettes with lung cancer. Sales stagnated, but were revived by filtered brands, now the mainstay of the industry. By the late 1950s, per capita consumption of cigarettes was rising again.

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### Chapter 3

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However, because we are not interested in using these data to establish actual consumption, and because we are interested in trends, where it is assumed that much of this uncertainty will tend to wash out, these data problems are not terribly significant.

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## Chapter 8

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23. See for example, Steve Mufson, "Cigarette Companies Develop Third World as a Growth Market," *Wall Street Journal*, 5 July 1985, p. 1.
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25. Tom Post, "Preserving Endangered Products," *Fortune* 109 (5 March 1984): 70-71.
26. See Robert M. Kaplan, "Behavioral Epidemiology, Health Promotion, and Health Services," *Medical Care* 23 (May 1985): 564-83, esp. table 1, p. 566; Leon S. Robertson, *Injuries: Causes, Control Strategies, and the Public* (Lexington, Mass.: Lexington Books, 1983); Susan P. Baker et al., *The Injury Fact Book* (Lexington, Mass.: Lexington Books, 1984). If the very recent gains in mortality reduction can be extended for several generations, an unlikely prospect, then the toll taken by heart disease would nearly disappear and a significant increase in life expectancy would occur. See John M. Owen and James W. Vaupel, "An Exercise in Life Expectancy," *American Demographics* 7 (November 1985): 36-69.
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# CONSUMING FEARS

THE POLITICS OF  
PRODUCT RISKS

Harvey M. Sapolsky

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## CONSUMING FEARS

18 public health surveillance systems now have the capacity to detect risks at a prevalence of fifty cases per 240 million population. Although few in number, the identification of toxic shock victims caused near national panic. State health officials and individual researchers, not always unwillingly, were thrust into the media spotlight to offer advice as the federal government and the tampon manufacturers struggled to decide upon a course of action. Weiner examines the defensibility of the action taken under the pressures of the moment.

Organizations are primed to react to very specific types of information. For some it is reports of a new disease. For others it is the suspicion that a product is carcinogenic. As the urea-formaldehyde case illustrates, consumer complaints about the health effects of exposure to the product provoked little regulatory activity because they were insufficiently dramatic. Enterprising state officials and health activists may wish to intervene, but they need a galvanizing medical finding to gain a wide hearing. According to Sanford Weiner who also prepared this case, the chance discovery by an industry group that formaldehyde could produce cancer in laboratory animals was such a finding. Regulatory agencies and trade associations uninterested in the fate of the home insulation material or its consumers had well-established positions to defend when this cancer link is reported. The subsequent policy debate has ensnared many additional products because of formaldehyde's ubiquitous uses and promises to allow everyone to reiterate opinions about appropriate standards for the regulation of potential carcinogens.

Our research strategy was straightforward if not especially elegant. We interviewed those expected or reported to be knowledgeable about the controversies. We dug through the records and read the news accounts. We decided early on to let each case be analyzed on its own terms rather than impose a standard format on such diverse situations. Periodic reviews of our common progress allowed identification of common themes and a string of insights. A concluding chapter brings together the general findings, but each case offers its own lessons as well.

## Chapter 2

## The Changing Politics of Cigarette Smoking

HARVEY M. SAPOLSKY

Cigarette manufacturing is surely the most resilient of businesses. At the turn of the century when cigarette smoking was first becoming popular in the United States, the Women's Christian Temperance Union and school principals who were worried about the decay of public morals (and, some say, cigar manufacturers who were worried about competition) succeeded in having fourteen states ban the production, advertisement, and sale of cigarettes. These laws proved ineffectual because cigarette smoking had already become a symbol of maturity, sensuality, and modernity for most Americans. Consumption boomed. The laws were quietly repealed.

After experiencing growth for three decades, the cigarette industry was hit hard by the onset of the Great Depression. Several years of faltering demand and competitive price cutting followed. But economic recovery and war spurred consumption. Soldiers received cigarettes with their field rations for their own use or trade. Even after price cutting ceased, the cost of cigarettes remained relatively low because of the large domestic production of tobacco and moderate taxation of cigarettes. By 1953, cigarette sales were over three times what they had been in 1929. More than half of adult males and about a quarter of adult females smoked.

Then came the first of the smoking and health scares, the release of epidemiological studies linking cigarettes with lung cancer. Sales staggered, but were revived by filtered brands, now the mainstay of the industry. By the late 1950s, per capita consumption of cigarettes was rising again.

## CONSUMING FEARS

The second smoking and health scare came in 1964 with the publication of the Surgeon General's report that officially identified cigarette smoking as a serious health hazard. Since then there have been many market disruptions: the requirement that cigarette packages and advertisements carry a health warning, the removal of cigarette advertisements from radio and television, the restriction of smoking aboard commercial aircraft, a rising concern about the health effects of side-stream smoke, and the release of additional reports linking cigarette smoking to heart disease, stroke, emphysema, birth defects, and various forms of cancer, to mention only the most significant health risks. Millions of Americans have quit smoking.

Remarkably, the industry has not collapsed. Instead, it has prospered. Although the portion of the adult population that smokes has shrunk to about a third, cigarette sales have increased. In 1984, about 600 billion cigarettes were sold, nearly 20 percent more than the total for 1964 (see figure 2.1). The tobacco industry has met every challenge and has even converted some into benefits. The introduction of brands that appeal to women and brands low in tar and nicotine for the health-conscious have helped stem the market erosion. So too has the coming of age of the postwar baby boom generation.

Opponents of cigarettes must wonder when, if ever, the smoking problem (or as some prefer to describe it, the epidemic of smoking) will be controlled. Even the most committed among them know that cigarettes are not likely to be banned again. Cigarettes are too deeply embedded in American society, as is the memory of the social disruption and criminal activities caused by the attempt to ban alcohol during the 1920s. Moreover, as some have begun to recognize, the industry has been extremely skillful in turning regulatory challenges into economic advantages. When warning labels were demanded in 1964, the firms acquiesced after a brief struggle. (Until recently, the caution used was "The Surgeon General Has Determined That Cigarette Smoking Is Dangerous To Your Health"; now there is a quarterly rotation of warnings, each describing a specific risk of smoking or a benefit of quitting.) Some say they gave in to avoid disruptive state labeling legislation. But others think it was to gain valuable protection from lawsuits seeking damages for the death or disability of smokers. After all, a smoker who is warned knows about the risks involved in smoking and thus can be said to consent to harming his or her own health if any injury occurs.<sup>2</sup> When the Fairness Doctrine required antismoking advertisements on radio and television to counter cigarette ads, cigarette sales began to fall. The industry voluntarily agreed to withdraw, beginning in 1971, all radio and television advertisements for cigarettes, thereby elimi-

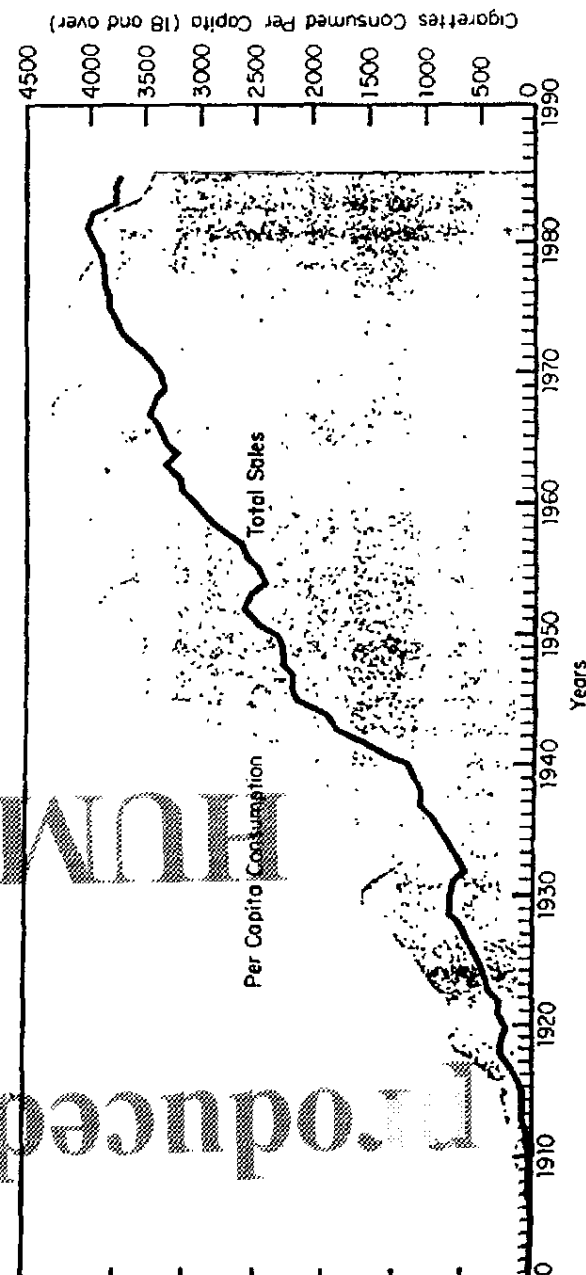


FIGURE 2.1

US Cigarette Consumption, 1900-1985

Sources: Economic Research Service, U.S. Department of Agriculture, from *Tobacco: A Social History* (1 April 1983) 69; and *Tobacco Outlook and Situation Report* (March 1986) table 1, p. 4

nating any need for the counteradvertisements and much of their depressing effect on sales.<sup>3</sup>

And yet the industry's good fortune may not be endless. The growth in the population of potential new smokers is slowing.<sup>4</sup> More important, cigarette smoking is losing its allure for influential segments of that population, the social and political trend setters. What was once so fashionable is becoming unfashionable. And stagnant or declining markets are likely to strain the industry's political base. Already there is a divergence of interests developing between tobacco farmers and cigarette manufacturers and among the manufacturers themselves. As its political base weakens, the industry becomes vulnerable to attack by groups that are more numerous and powerful than its traditional opponents.

### Who Smokes and Who Does Not

Although the number of Americans who smoke cigarettes has actually increased since the Surgeon General's 1964 report, the campaign against smoking has not been without effect. Kenneth Warner estimates that the per capita consumption of cigarettes would be 40 percent higher today if the well-publicized concerns about the health effects of smoking did not exist.<sup>5</sup> During the 1960s and 1970s, cigarette smoking appears to have been initiated by a declining percentage of an expanding population. New smokers exceeded quitters, but not by much. Today, about 35 million Americans smoke cigarettes, only a few million more than did in 1964.<sup>6</sup>

Of course, it is impossible to be precise about the prevalence of smoking. Estimates are based upon surveys, and people's responses are likely to be affected by the negative health connotations associated with cigarette smoking. Smokers are thought to report inaccurately about their use of cigarettes.<sup>7</sup>

We do know that the percent of people who identify themselves as smokers has declined since the 1960s. In 1965 nearly 42 percent of those over seventeen years of age said they were current cigarette smokers; by 1986 less than 31 percent said they were. More men than women smoke, though the gap between the sexes has apparently narrowed over the years. In 1986, just over 51 percent of the men surveyed and 33 percent of the

women said they smoked. By 1986 approximately 35 percent of men and 28 percent of women said they smoked. The decline in cigarette smoking reported by adult males has been fairly steady since the mid 1960s, but the decline for adult females is more recent.<sup>8</sup>

The rate of smoking among teenagers has apparently declined too, although the reliability of these figures must be even more suspect than those for adults. Today less than 20 percent of teenagers admit to smoking cigarettes, whereas in the mid-1970s over 25 percent did.<sup>9</sup> As is the case in most industrialized nations, more girls than boys in the United States say they smoke, 19 percent for females versus 16 percent for males.<sup>10</sup>

\* Smoking seems to be related to social class. Less than a third of those in professional or business occupations questioned in a 1981 Gallup survey said they smoke cigarettes; nearly 40 percent of clerical or blue-collar workers said they did. People who had some college education were less likely to smoke than people with only high school educations. Higher-income people were less likely to smoke than lower-income people. More blacks than whites were smokers.<sup>11</sup>

The changing characteristics of smokers affect the industry's commercial and political opportunities. The smaller the percentage of smokers in the population, the easier it is to restrict their behavior. The more the smoking population becomes black, female, and blue collar, the less economic and political strength it represents. The ability of smokers to absorb tax and price increases will diminish, as will their power to resist direct legislative restrictions on smoking.

\* Perhaps most significant, cigarette smokers of every description are acquiring a negative self-image. When asked, most smokers say that they regret their habit, are embarrassed by it, and want to quit.<sup>12</sup> Nearly all are aware of and believe in the health danger associated with cigarette smoking even if they are somewhat vague about the specific risks involved.<sup>13</sup> Few are proud of smoking despite the positive advertising used to promote it. For example, a survey of teenage use of common stimulants—alcohol, tobacco, coffee, and marijuana—found that users felt guilty only about cigarette smoking.<sup>14</sup> Other studies report that smokers are increasingly uncomfortable about smoking in the presence of nonsmokers.<sup>15</sup> Smoking is now thought to be a liability in career advancement and social interaction, whereas recently the opposite was the case.<sup>16</sup> The more widely such negative beliefs are held among smokers, the more difficult it is to mobilize them to defend smoking. The less favorably smoking is viewed, the fewer new smokers are likely to be recruited.

## The Tobacco Connection

Americans not only smoke cigarettes, they also grow tobacco, a fact of no small political importance. American farmers produce about 2 billion pounds of tobacco, over 90 percent of which is accounted for by varieties used in cigarettes and two thirds of which is destined for domestic consumption. Tobacco is our sixth most important field crop and currently generates about \$2.8 billion in farm income.<sup>17</sup>

Tobacco's political significance stems not from its role in agriculture—tobacco accounts for only about 2 percent of gross farm income and is grown on less than 1 percent of U.S. cropland—but rather from the characteristics of its production.<sup>18</sup> Although tobacco is grown in twenty states, the bulk of the production of the two prime varieties used for cigarettes, burley and flue-cured, is concentrated in just six states: North Carolina, Kentucky, Tennessee, Virginia, South Carolina, and Georgia (listed in order of importance). Tobacco farms tend to be quite small by American standards, averaging less than 10 acres in size, and highly labor-intensive, requiring hundreds of man-hours per acre to produce a crop. For a few Southern states and many Southern farmers and farm workers, tobacco is not only important, it is crucial for their economic livelihood.<sup>19</sup>

The structure of burley and flue-cured tobacco farming is buttressed by a federal price-support program. When the program was instituted during the 1930s, tobacco was grown on small-scale farms that used little or no mechanical technology. Tobacco is still grown on small-scale farms with relatively little mechanical technology, primarily because of the continuation of the price-support system.<sup>20</sup>

The purpose of price supports is to provide a stable market for producers. Every year prior to the growing season support prices are set for each variety and grade of tobacco included in the program with the prices based on historical market relationships and an index of recent changes in factor costs. Growers unable to sell their tobacco at prices above the support price are eligible to offer their crop for a federal cash loan at the support price. Unless market prices improve, the loans are not redeemed and the government stores the tobacco for later sale. To prevent the accumulation of a large market "overhang," the government limits tobacco growing to allotment holders, adjusting the size of the allotments each growing season either in acreage or poundage to clear the market. Allotment decisions are based on the previous season's experience.<sup>21</sup>

Allotments are essentially federal licenses to grow tobacco. The system

freezes tobacco growing in location and, at least partially, in technology. The number and distribution of the allotments reflect the situation of tobacco farming during the Depression when the basic system was established and when production was just beginning to shift to land where large farms could be assembled and technology employed efficiently. Currently there are about 520,000 allotments, with an average holding of less than 2 acres.<sup>22</sup> Tobacco allotments, governed by annual marketing quotas, may be sold or leased, but only within counties, not between them. The number of producing units has shrunk to under 180,000 due to leasing, but because of restrictions on intercounty allotment transfers, relatively few of the units are yet large enough to utilize advanced mechanization.<sup>23</sup>

Some think it is strange that the federal government would seek to provide price supports and a stable market for cigarette tobacco when it also seeks to curtail cigarette smoking. There are increasing attempts in Congress to eliminate all of the tobacco "subsidies."<sup>24</sup> The cost of inspecting and grading tobacco was shifted from the government to the farmers in 1981. Beginning with the 1982 crop, farmers must pay an assessment on each pound of tobacco they sell in order to finance loans made for the surplus production.<sup>25</sup>

Legislative challenges aside, the support program is approaching collapse. The formula for establishing the support level for tobacco, which overcompensates for inflation, has caused the price of American leaf to escalate rapidly in recent years. The strong dollar, perhaps a temporary phenomenon, has also hurt sales. Foreign buyers are turning to cheaper tobacco produced in Zimbabwe, Malaysia, Brazil, and India, among other places.<sup>26</sup> Once American produced varieties accounted for over half of the world trade in tobacco, now they represent less than one fifth and are continuing to slide.<sup>27</sup>

American cigarette manufacturers are also shifting to foreign leaf suppliers—they now import almost a third of their needs.<sup>28</sup> In addition, the overall tobacco content of American cigarettes has been reduced to accommodate filters and the desire for lower tar and nicotine levels. The average cigarette today contains one third less tobacco than it did in the early 1960s.<sup>29</sup> Combined, these factors prevent domestic tobacco growers from sharing in the market expansion that occurred despite the Surgeon General's warnings that cigarettes are a health hazard.

A large surplus of tobacco has been accumulating despite controls intended to prevent it. In 1983 almost one half of the burley crop and one quarter of the flue-cured crop was sold for storage. Over a year's supply of these varieties is being held under the loan arrangements. The more



tobacco stored, the higher the assessments to growers. (The fees already exceed 15 percent of the prices that farmers receive.) Attempts to control surpluses through allotment restrictions have been self-defeating. Lower allotments raise the rents for growers who lease their acreage. They also tempt growers to produce lower-quality tobacco, further hurting the marketability of American leaf, which had commanded premium prices because of its traditionally high quality.

Several stopgap measures have been adopted. The support prices for the 1983, 1984, and 1985 crops were frozen at 1982 levels or lowered through administrative action by the Department of Agriculture. Corporate entities such as businesses, schools, churches, and utility companies, which had acquired tobacco allotments through bequests and purchases, are now required to sell them. Legislation has banned the leasing of allotments after 1987, by which time owners will have to sell their allotments, acquire tenants, or become growers themselves.<sup>31</sup>

Despite these measures, the continued accumulation of surpluses seemed certain unless more radical changes were made. Some growers have sought to restrict manufacturer imports of tobacco leaf through the imposition of a special tariff.<sup>32</sup> Others wanted to use part of the federal cigarette tax to pay for the price supports. There was also pressure to have the cigarette manufacturers buy, over several years, the entire stock of accumulated tobacco in order to reduce storage assessments and save the federal support program. But the firms are said to believe that the program can be maintained only if leaf support prices are significantly reduced and tobacco production is tightly controlled.<sup>33</sup>

The congressional compromise that was worked out for the 1985 deficit reduction act gives the manufacturers a direct role for the first time in setting the growing quotas in exchange for their commitment to share half the cost of maintaining the price-support program with the growers, and to buy up the existing tobacco surpluses. The purchases of the surplus stocks are to be made at discounts that are estimated to cost the government \$1.1 billion. The hope is that tighter quotas and reduced price supports will eventually produce equivalent program savings. The future of the program, however, is not assumed. Many growers are unhappy with the prospect of declining income that the act holds. A few have even sided with the forces opposing smoking and urged the abolishment of the support/allotment system as a way to free tobacco growing entirely from government-mandated control.<sup>34</sup>

The elimination of the tobacco support program would, of course, lower tobacco prices and presumably, if passed along to the cigarette consumer, would be at least a moderate stimulus to the demand. More important

however, it would reduce the number of people in several Southern states who depend to some degree on the cigarette market. Production would shift to more efficient locations (within those states and elsewhere) and would use more efficient methods.<sup>35</sup> Many who now hold the more than half-million tobacco-growing allotments would no longer be involved with the crop; many thousand fewer farmers and farm workers would be needed to produce it. The interest of Southern congressmen and senators in defending tobacco and its prime method of consumption would be bound to decline. Although the cigarette industry survives even in countries where little, if any, tobacco is grown (Great Britain, for example), it does so with much less confidence in its ability to withstand political attack than does the industry in countries where there is a substantial agricultural interest in tobacco. Both opponents and proponents of cigarette smoking believe that the fate of the tobacco support program has political consequence.

### The Marlboro Man, Virginia Slims, and Friends

Outwardly, the cigarette industry has the appearance of a highly successful, well-entrenched oligopoly. Profits are substantial, well over \$2 billion in 1984. Return on investment exceeds the average for all U.S. manufacturing by nearly 30 percent. The business is largely recession-proof, not so surprising given that the product is a pleasurable stimulant that is habituating, if not addictive. Prices move generally upward and in unison. Huge advertising expenditures and the persistent health controversy strongly discourage entry by those who might be attracted by its high margins. And yet, tension exists among the participants.

Government helped shape the industry's current structure, just as it helped shape the structure of tobacco growing. The Justice Department won a Sherman Antitrust Act case against the American Tobacco Company in 1911. The company was the key element in the tobacco trust that James B. Duke had assembled through various predatory business practices. As a penalty, the trust was dismembered and its principal cigarette business divided among a much-reduced American Tobacco Company and three of its former subsidiaries: R. J. Reynolds Tobacco Company, Liggett & Meyers Tobacco Company, and P. Lorillard Tobacco Company.<sup>36</sup> These four firms and two others—Brown & Williamson Tobacco Company, an American affiliate of B. & T. Industries (formerly

British American Tobacco Company), the severed British subsidiary of the old tobacco trust, and Philip Morris, Inc., an independent in the days of the trust—now control over 99 percent of the U.S. cigarette market. With the antitrust suit, government traded monopoly for oligopoly in the cigarette industry.<sup>37</sup>

The oligopoly's main mode of rivalry quickly became advertising. In 1913, R. J. Reynolds introduced Camels, a cigarette blended from burley, Turkish, and Maryland tobaccos, and heavily advertised it.<sup>38</sup> The other firms responded with similarly constituted cigarettes and promotional efforts. The full genius of the advertising imagination was soon brought to bear on the problem of marketing cigarettes, contributing such marvelous bits of Americana over the years as "Reach for a Lucky Instead of a Sweet," "I'd Walk a Mile for a Camel," "So-o-o-old American," "L.S./M.F.T." (Lucky Strike Means Fine Tobacco), "Call for Philip Morris," the dancing cigarette packages, the smoke ring billboard in Times Square, and the Marlboro Man.<sup>39</sup>

The firms have used their marketing skills to counter the various shocks that have hit the industry since World War II. Filter cigarettes were heavily promoted in the 1950s after the initial cancer scare and now account for over 90 percent of sales. The Surgeon General's 1964 report brought a proliferation of brands designed to appeal to particular market segments through variations in length, flavor, or image (Benson & Hedges, Kool, Tareyton, and Virginia Slims). More recently, cigarette firms have introduced low-tar brands (Carlton, Now, Merit, and Kent III) and heralded government tar ratings in their advertising. Once smokers had a few dozen brands to choose among; they now have over 100 due to differentiation by filter, length, packaging, and tar levels.<sup>40</sup>

As Table 2.1 indicates, not all firms adjusted equally well to these market changes. American Tobacco, the largest manufacturer in 1953, was slow to introduce filters and, as a consequence, lost considerable market share. Lorillard and Liggett & Meyers were inept in developing new brands, paying the price in their market rankings. In contrast, Philip Morris, once the sixth largest firm, has been extremely perceptive in identifying evolving consumer preferences—and recently overtook R. J. Reynolds for the market lead. Together, Philip Morris and Reynolds control over two thirds of industry sales. Philip Morris's Marlboro brand alone accounts for over 22 percent of the American market and is the world's largest-selling cigarette.<sup>41</sup>

Because of production efficiencies and low advertising costs per carton sold, well-established cigarette brands have rates of return on investments

TABLE 2.1

Share of U.S. Cigarette Market (%), Selected Years

Company	1953	1963	1970	1985
Philip Morris	9.6	9.4	16.5	35.7
R. J. Reynolds	26.5	34.3	31.7	32.0
Brown & Williamson	6.6	10.5	16.7	11.8
Lorillard	7.2	10.9	8.7	8.1
American Brands	33.3	24.8	19.6	7.4
Liggett Group	16.8	9.7	6.8	5.0

Source: John C. Maxwell, Jr., Furman Selz Mager Dietz &amp; Birney Inc., New York

of well over 30 percent. Improvements in cigarette-making machines have increased production capacity for a single unit from 180 packs (eighteen cartons) per minute in 1965 to 400 a minute today. Once a significant market share is obtained, advertising costs per carton drop considerably. A single point of market share, the industry standard for a brand's success, is currently worth more than \$250 million in annual revenues and tens of millions of dollars in profits. No wonder marketing efforts exceeding \$100 million have been made to introduce new brands.<sup>42</sup>

Much of the industry's huge cash flow, however, has been used for diversification because the firms recognize the cigarette market's potential for decline.<sup>43</sup> All firms have eliminated the word *tobacco* from their corporate name. RJR Nabisco (formerly R. J. Reynolds Tobacco, R. J. Reynolds, and R. J. Reynolds Industries) owns Del Monte, a major fruit and vegetable processor; Heublein, a marketer of distilled spirits and wines and the corporate parent of Kentucky Fried Chicken; and Nabisco Brands, the nation's fourth largest food-processing firm. Among the well-known brands in the Reynolds food and beverage line are Hawaiian Punch; Chun King oriental foods; Vermont Maid syrup; My-T-Fine puddings; Planters peanuts; Ritz crackers; Almost Home cookies; Smirnoff vodka, and Inglebrook, Colony, and Lancer wines. Philip Morris owns Miller Brewing, the nation's second largest beer producer (Miller Highlife, Lite, and Löwenbräu brands). In 1985 the firm restructured, changed its name to Philip Morris Companies Inc., and purchased (in one of the largest nonoil transactions) General Foods, producer of Maxwell House coffee, Jell-O, Post cereals, among other popular labels. American Brands, formerly American Tobacco, sells crackers (Sunshine Biscuits), bourbon (Jim Beam), toiletries (Andre Jergens), insurance (Franklin Life), and office supplies (Swingline and Wilson Jones) as well as cigarettes. It recently acquired Dunhill's, the

nation's largest private security and investigation agency, and Wells Fargo, the bank transfer service. Brown & Williamson is part of BATUS, the American subsidiary of B.A.T. Industries, an international enterprise whose American holdings include the Saks Fifth Avenue and Marshall Field department stores.

The two other firms, Lorillard and Liggett & Meyers, have been acquired by larger, noncigarette based firms. Lorillard is a division of the Loews Corporation, the owner of a chain of hotels (including L'Enfant Plaza in Washington, D.C., and the Regency, the Summit, and the Drake in New York City) and CNA Finance, an insurance and consumer credit company. Loews recently purchased 25 percent of the Columbia Broadcasting System, helping the television network avoid a hostile takeover. Liggett & Meyers, after changing its name to The Liggett Group and acquiring interests in pet foods (Alpo, Vets, and Liv-A-Snaps) and distilled spirits and wine (J&B, Bombay, Grand Marnier, and Campari) was itself acquired by Grand Metropolitan, a British conglomerate active in hotel, brewery, restaurant, and gambling businesses. It now operates as a subsidiary of GrandMet U.S.A. (which, after acquiring Pearle Health Services, a franchiser of eye care centers, and Quality Care, a nursing home chain, supposedly now wishes to dispose of Liggett's cigarette business as it seeks a larger role in health care services).

As a result of this diversification, none of the corporate owners of the six major cigarette companies is much more than 40 percent dependent for its revenues on the fortunes of the domestic cigarette market. Few of the acquisitions, however, approach the profitability of the cigarette business; tobacco remains the key source of earnings for the owning firms no matter the involvement in other activities.<sup>44</sup> Not surprisingly, there has been some interest in expanding into the world market for cigarettes, which is still growing if only slightly. American Brands controls Gallaher, a major British cigarette manufacturer. Philip Morris and Reynolds fought recently for a share of Rothman's, a British-based firm that has important cigarette holdings in several foreign markets; Philip Morris won.<sup>45</sup> Reynolds has since signed agreements with the People's Republic of China for the establishment of manufacturing facilities in the world's largest cigarette market.<sup>46</sup> And both Philip Morris and Reynolds are seeking better access to the Japanese cigarette market, which is only now converting to free enterprise after having long been controlled by a state-owned monopoly.<sup>47</sup>

All this activity means the firms may begin to view the industry's profit potential differently. Already, some splits have occurred. Liggett, the firm

with the smallest market share, introduced a line of low-priced generic (unbranded) cigarettes, threatening the industry's long-established pricing harmony.<sup>48</sup> Philip Morris and Reynolds successfully sued Brown & Williamson over the tar rating advertised for its Barclay cigarettes. Philip Morris and Reynolds claimed misrepresentation was endangering public confidence in the cigarette rating system.<sup>49</sup> The emphasis on tar ratings in cigarette advertising was started by American Brands when it boasted about the low-tar rating of its Carlton cigarettes, much to the consternation of the major producers.<sup>50</sup> Philip Morris lobbied state legislatures (unsuccessfully in most cases) seeking to block the distribution of packs of twenty-five cigarettes (the U.S. standard is twenty) pioneered by Reynolds. Reynolds itself now sees its prime growth in foods and beverages. Because of its investments in the coffee, beer, and cereal markets, Philip Morris has to worry about the maneuverings of Procter & Gamble, Budweiser, and Kellogg's as well as those of its cigarette rivals. The more diverse the firms' interests the more likely that one or another will seek quick profits in cigarettes at the expense of the industry's long-term viability.

### Hard-to-Break Habits

Cigarette smoking generates revenues for governments as well as for tobacco farmers and cigarette manufacturers. The federal government's cigarette tax was raised from 8 cents to 16 cents per pack in 1982. Each state also taxes cigarettes, with rates ranging from 2 to 31 cents per pack. An additional tax of 1 to 15 cents is imposed by several hundred municipal and county governments. These excise taxes were estimated to amount to \$9.3 billion in 1984 (\$4.7 billion for the federal government and \$4.6 billion for state and local governments).<sup>51</sup> Additional billions are collected through normal business and sales taxes from the growers, manufacturers, wholesalers, and retailers, and thus from the consumers of cigarettes.

The doubling of the federal tax, which had been held constant for 30 years, was a major political defeat for the industry. The need for increased federal revenues during a period of severe budget deficits overcame arguments that the tax is regressive, disproportionately burdening low-income consumers. But more important, the increase indicates that congressional

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delegations from tobacco-producing states no longer can protect cigarettes from the political imperatives of "taxing sin."

The consumption of certain products, cigarettes and alcohol surely among them, is strongly opposed by some people on moral grounds, aside from health concerns. Yet consumption is not much affected by carefully crafted price increases. State and foreign experiences demonstrate that the governmental temptation is to exploit the inelasticity in the demand curve for "sin" by heavily taxing the consumption of such products, in order to enhance revenues and support the product's opponents in the process. Only a minority of the population bears the tax while at least some of the rest of the population takes satisfaction in its application. Apparently there is still opportunity for this practice in the United States. In most European countries, nearly three quarters of the retail price for cigarettes is taxes; in the United States, taxes are less than half the retail price. Although the federal increase was passed as a temporary measure, it was permanently extended in 1986 amidst calls for additional increases.<sup>32</sup>

The limitation in taxing sin is the effect on government revenues. The federal tax increase of 8 additional cents per pack caused about a 4-5 percent decline in consumption,<sup>33</sup> not enough to inhibit the imposition of additional taxes, and this is an effect that wears away somewhat in time. Economists estimate that most of the impact of cigarette tax or price increases appears in the decision to smoke and not as much in the amount smoked. Teenagers, in particular, are thought to be discouraged from smoking by higher cigarette prices.<sup>34</sup> Faced with heavier taxation, a smoker, of course, has alternatives besides abstention or moderation. Hand rolling cigarettes is one way to reduce the cost of smoking; smoking contraband cigarettes is another.

Because of the great disparity in state cigarette taxes, it is not surprising that there is much smuggling of cigarettes. It is also no surprise that the tobacco-producing states impose the lowest tax rates. Smuggling cigarettes between the tobacco states and the high-tax states (which are concentrated in the Northeast, but which also include Florida, Illinois, and Wisconsin) is estimated to result in a revenue loss of hundreds of millions of dollars.<sup>35</sup> Attempts to eliminate cigarette smuggling by establishing a uniform excise tax for all jurisdictions has been blocked by the low-tax states. Instead, Congress has extended federal antismuggling laws to cover trade in contraband cigarettes.<sup>36</sup> Yet criminals, organized or not, are not easily deterred from their cigarette-smuggling activities. With the difference between the price of a package of cigarettes in New Jersey or New York and the price in North Carolina of at least 20 cents, a single truckload

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of bootleg cigarettes could produce \$90,000 to \$100,000 in illegal profits for a smuggler.<sup>37</sup> Counterfeiting tax stamps and transfers between other jurisdictions permit even larger gains for smugglers.

Higher cigarette taxes forge a strange partnership. Politicians must take care that cigarette sales do not fall too much in establishing the rates. Smugglers hope that moralizers triumph in most, but not all jurisdictions. And the cigarette manufacturers advertise more heavily in the jurisdictions with the highest rates, hoping that either governments exceed their revenue expectations or that smugglers stock their brands.

## The Smoking and Health Issue

Since the 1950s cigarette firms have had the difficult—many would say impossible—task of persuading the public that cigarette smoking is not harmful. Their continuing claim is that the case against smoking does not meet the strictest standards of scientific proof because the evidence linking smoking to disease is mainly statistical.<sup>38</sup> Initially, there was much scientific debate over the validity and meaning of the epidemiological results that identified smoking as a major factor in the development of cancer and other diseases.<sup>39</sup> But once the Royal College of Physicians in Britain and the Surgeon General's committee in the United States endorsed the conclusion that the risks of smoking are substantial, the smoking and health debate lost much of its scientific intensity even though the risk was not totally clarified.<sup>40</sup> To be sure, significant resources are still invested in studies of the health effects of smoking, but mostly because scientists see this support as an opportunity to explore a variety of other interesting questions and politicians see it as a convenient substitute for action. For all practical purposes, the smoking and health issue has become, since the mid-1960s, a protracted political struggle over the regulation of smoking.

The firms seem well situated to protect their interests. They are, after all, the central enterprises in a \$30 billion industry, a source of income for hundreds of thousands of persons. Their lobbying arm, the Tobacco Institute, employs the full range of Washington insiders including former congressmen, White House aides, congressional staff members, and reporters and broadcasters. The firms hire the best available legal and public relations counsel. Through a network of detail men, distributors, and advertising agencies, they keep in close contact with state and local governments.

Executives contribute to political campaigns. And employees stand ready to write and call officials when offending legislation is contemplated.<sup>61</sup>

In contrast, the political opponents of smoking appear weak and divided. The two main activist organizations in the antismoking movement are Action on Smoking and Health (ASH), which concentrates on legal challenges to cigarettes before federal regulatory agencies, and Group Against Smokers' Pollution (GASP), an association of local chapters, which focuses on state and local legislative initiatives. The jurisdictional distinctions notwithstanding, ASH and GASP compete for the same limited membership and financial support. The domination of ASH by John F. Banzhaf III has been a source of antagonism between the organizations because Banzhaf has gained (and is said to seek out) journalistic recognition as the national leader of the attack on cigarette smoking.<sup>62</sup>

Several national disease associations, especially the big three—the American Cancer Society, the American Heart Association, and the American Lung Association—have taken official stands pointing out the health risks of cigarette smoking. However, as their critics in the antismoking movement are quick to note, the associations have been cautious in seeking restraints on smoking. For example, only recently have they hired Washington lobbyists and supported governmental efforts to combat smoking.<sup>63</sup> The reasons for this self-restraint are not difficult to identify. Traditionally, these organizations devote most of their resources to support medical research and training to fight a specific disease. Most funds come from public drives conducted by local affiliates. Controversial issues, like the regulation of smoking, threaten the associations because internal conflict could arise if resources are absorbed for which there are already many established claimants. The associations fear such issues could jeopardize their ability to raise funds either by reducing volunteer effort at the local level or by alienating segments of the public. Moreover, because smoking is linked to several diseases, campaigns against smoking can be seen as blurring the distinctions among the associations, destroying their unique identities and thus weakening the ability of the associations to raise funds.

Relations between the associations and the activist groups are necessarily strained. The associations are status-conferring organizations as well as charitable groups—and that encourages a strong establishment orientation. Activist groups, in contrast, require a confrontational political style to maintain support and they distrust the elitist preferences of the associations.<sup>64</sup>

But this description greatly underplays the strength of the antismoking movement. Support for smoking control appears at influential places in the society. Nearly every major medical organization has taken a stand against

smoking. Most physicians advise abstinence. Public health and preventive medicine specialists seek a greater commitment against smoking within the profession and act as its conscience on the issue. A physician cannot hold high office within the profession and remain a public smoker. Many in the media—from Ann Landers, the popular advice columnist, to Jane Brody, the *New York Times's* scientifically inclined nutrition editor—are sympathetic to restrictions on smoking and frequently remind their readers of dangers posed by cigarettes. Certain publications refuse tobacco advertisements and editorialize against smoking, *Reader's Digest* and *Good Housekeeping*, for example. Rarely is cigarette smoking depicted in a favorable manner on television.<sup>65</sup>

Opposition to smoking is a career for some and a calling for others. Thousands of health promotion specialists, many of whom make smoking cessation their main cause, have been hired by industry and schools in response to the growing interest in fitness and good health. Several Protestant denominations, the Mormons and the Seventh Day Adventists most prominent among them, are, by doctrine, opposed to the use of tobacco. The Mormon church advocates public service and many of its members are active in the campaign to regulate smoking; Seventh Day Adventist groups sponsor smoking cessation clinics.

Government also participates in the effort to control smoking.<sup>66</sup> Although the Office of Smoking and Health, the federal agency responsible for the management of antismoking initiatives, has been hampered by budget restrictions, it still operates an information clearinghouse used extensively by smoking-control advocates. Administration attempts to curtail regulation notwithstanding, the Federal Trade Commission and the Department of Transportation (the regulatory successor to the Civil Aeronautics Board) remain committed to policies that regulate smoking and continue to explore possible elaborations of these policies. Commissioners of public health in various states have been vocal in their condemnation of smoking. Each year, the U.S. Surgeon General—no matter who is in the White House—finds another way to reiterate the assessment that cigarettes are dangerous and gain additional publicity for the antismoking cause; most recently, it was a call for a smoke-free society by the year 2000.<sup>67</sup>

The problem facing the antismoking movement is not the absence of support, but rather the absence of policies, banning prohibition, that will significantly limit smoking. As mentioned previously, the addition of warning labels to cigarette packages and the elimination of radio and television advertisements for cigarettes apparently provided the industry with significant, although unintended, benefits. Moreover, despite these

and other marketing handicaps, cigarettes remain a very familiar product, heavily advertised and widely consumed.<sup>64</sup> Further curbs along these lines, for example, requiring stronger, even gruesome warning labels or banning the street distribution of sample cigarettes, although perhaps pleasing ideologically to some proponents of the antismoking movement, may only test the ingenuity of the cigarette firms' marketing and legal staffs without causing major changes in the prevalence of smoking.<sup>65</sup>

In fact, it can be argued that the puritanism inherent in the antismoking movement has retarded the development of effective policies. The urge to portray cigarettes as an unmitigated evil, to condemn smokers as sinners, ignores the very real pleasures and purposes of smoking that perpetuate the practice, even in an ever more hostile environment of restrictions and threatening messages.

But after two decades of experience, the antismoking movement is gaining sophistication. Madison Avenue professionals now prepare advertisements; and scientific and public relations activities are coordinated. More importantly, the movement is adopting a new strategy with great potential for affecting cigarette consumption. This strategy involves the social isolation of the smoker, based on the recognition that smoking is chiefly a social phenomenon and can be attacked as such. The intent is to make the smoker a pariah, shunned by others and plagued by self-doubts.

One effective expression of this strategy is the demand that smokers refrain from smoking in the presence of nonsmokers. The claim is that tobacco smoke endangers the health of exposed nonsmokers. Although the medical evidence demonstrating the health effects of side-stream smoke exposure is incomplete and disputed, much of the public believes that there are important risks.<sup>70</sup> More and more restrictions are being placed on smoking in public locations, including government buildings, restaurants, hospitals, and auditoriums.<sup>71</sup>

The cigarette industry has attempted to fight the restrictions, arguing that courtesy rather than the law should govern disputes between smokers and nonsmokers. National advertising stresses the economic importance of tobacco and argues that the threat to nonsmokers has not been proved. The industry has also won several referenda on the issue of restrictions,<sup>72</sup> often with the support of the police, who have little taste for the complaints that they suffer from offenders when enforcing widely ignored laws.

In 1983, though, the industry lost an important referendum in San Francisco that challenged a city ordinance extending smoking restrictions to private workplaces. The introduction of mandatory restrictions into the work environment, where smoking restrictions already occur fairly fre-

quently on a voluntary basis, threatens to curtail smoking on the job by clerical and manual workers who often lack the private workspace common among senior executives. The failure of many employers in San Francisco to oppose the ordinance indicates also their acceptance of claims by antismoking groups that smoking imposes significant economic costs on their business through higher insurance, medical, and cleaning expenditures.<sup>73</sup> This in turn may mean the further isolation of smokers in terms of work and promotion opportunities. Courts have been willing to uphold employment discrimination for smoking if on no other grounds.<sup>74</sup> Already dozens of other jurisdictions have followed the San Francisco example by restricting on-the-job smoking.

Another important development is the changing content of antismoking television spots directed toward teenagers. Instead of repeating the litany of health risks associated with smoking, these public service advertisements now often depict smoking as behavior that significantly reduces one's sexual attractiveness.<sup>75</sup> Calculated, of course, to strike terror into the hearts of young smokers, these advertisements demonstrate the growing sophistication of the antismoking movement. The very techniques that sold the cigarette habit are being used to discourage it.

Waiting to be fully tested are other strategies, some domestically developed and others imported. Product liability suits, the American way to get even (and perhaps rich as well) are again being attempted against cigarette firms. Today's social and legal climate makes such suits attractive as does the convenient designation of cigarette smoking as an addictive disease by officials at the Alcohol, Drug Abuse and Mental Health Administration. Addictive products presumably are unprotected by warning labels noting a health hazard because they remove the possibility of free choice.<sup>76</sup> A total advertising ban, as imposed in several foreign countries, has also been suggested, with magazines and newspapers as the specific targets on the grounds that substantial advertising by cigarette manufacturers inhibits editorial criticism of smoking.<sup>77</sup> Some advocate linking cigarette taxes to the cost of treating the health effects of smoking, which offers an opportunity to improve the financial base of the Medicare program while imposing a substantial penalty on smoking.<sup>78</sup>

## A Rolling Bandwagon

The growing social isolation of smokers and the smokers' own feelings of inadequacy create opportunities for others—businessmen, association directors, and consultants, for instance—whose task it is to identify social trends and use them for economic and political advantage. The decline of smoking is certainly one such trend. So too are the negative attitudes remaining smokers express toward their own behavior.

Consider the increased interest in preventive health efforts as a solution to the national problem of escalating health care costs. Smoking is frequently cited as the single behavior most likely to lead to chronic ill health and early death. Aware of this, many smokers claim that they wish to stop. Various programs have been established to assist them in quitting. Some utilize electric shock, others saturation smoking, and still others group therapy or nicotine chewing gum, but none can demonstrate that they achieve much success in either permanently altering behavior or reducing health care costs.<sup>79</sup> Yet advocacy for the expansion of preventive programs grows, especially among health care providers and health insurers who are pressed to provide options to control rising health care costs. Their willingness to ignore the evidence on prevention may not be unrelated to a need to deflect attention away from policy alternatives more threatening to the interests that they represent.<sup>80</sup>

Or consider the public affairs strategies of industries beset with environmental hazard problems. Many of the illnesses attributed to industrial pollution can also be attributed to or exacerbated by smoking.<sup>81</sup> It is not surprising that asbestos and chemical firms have joined the rising chorus against smoking. Law firms representing asbestos clients are suing the tobacco companies to involve them in the mammoth liability claims filed against the asbestos industry. Chemical firms have helped finance public interest groups with high visibility in the antismoking cause. Given the declining status of smoking, such action carries little risk and offers the possibility of some important gains.

Certainly, there are some profits to be made in attacking the vulnerabilities of smokers, as other firms have discovered. More and more products are directed toward the social fears of smokers. There are special toothpastes to brighten their stained teeth, mouthwashes to refresh their fouled breath, and room air filters to permit visits by whatever remaining friends they may have.<sup>82</sup> Constant reminders that "Yellow tobacco stains are U-G-L-Y" and "Bad breath is bad but smoker's breath is worse" fray the

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nerves of the already worried smoker. The ads probably offer effective, if unintentional reinforcement to wavering nonsmokers.

Nonsmokers themselves are an increasingly attractive market. They are offered life and health insurance discounts and smoke-free environments in which to fly, drive, dine, and vacation. The nonsmoking symbol, so offensive to some, is welcomed by many others. Converting it into a profit opportunity becomes the businessman's urge.

Cigarette smokers' problems tempt even tobacco producers. The makers of Skoal Bandits, a smokeless moist tobacco, advertise their product with the slogan "Take a pouch instead of a puff." A Texas-based firm is introducing a smokeless cigarette that offers nicotine through a plastic cigarette-like tube that is sucked rather than lit.<sup>83</sup>

The increasing attack on smoking emboldens those who have kept silent on the issue. More and more clergymen and editorial writers in the South now condemn smoking and their region's protection of tobacco, taking pride in their newfound courage.<sup>84</sup> Some school teachers and parents not only wish children to be abstainers, but also encourage them to be the proselytizing moralizers that they are so inclined to become.

Politics follows life. Enterprising politicians seek out popular causes and champion them. As nonsmoking becomes more common, so will proposals to restrict smoking further (hundreds are introduced each year in state legislatures). Discrimination against smokers will not only grow, but will carry increasingly the endorsement of government. Surely, more taxes are in store for smokers because fewer and fewer politicians will rise to defend a behavior so many others condemn.

Cigarette smoking, however, will not soon disappear in America. The pleasure it offers is too seductive to suppress, its form of consumption too convenient to supplant. Barring a successful series of liability suits, someone will always be willing to make cigarettes for sale.<sup>85</sup> But ostracized and heavily taxed, smokers get to rethink the decision to smoke nearly every time they light up. Cigarettes are a product falling out of fashion, falling more rapidly than either their critics or their manufacturers wish to acknowledge. Although the smoke is clearing from their world, critics of smoking will probably complain just as bitterly about any lingering fumes. Given the pressures besetting the smoker, it is unlikely that the manufacturers will be able to deflect the current market challenge as easily as they have past challenges. Changes in length, flavor, or packaging of cigarettes have their limits.

## NOTES

## Chapter 1

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However, because we are not interested in using these data to establish actual consumption, and because we are interested in trends, where it is assumed that much of this uncertainty will tend to wash out, these data problems are not terribly significant.

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## Chapter 5

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## Chapter 6

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11. Or perhaps the appeal is just to the public interest leaders themselves who are upper-middle-class liberals and graduates of elite universities. Lichter and Rothman, "What Interests the Public and What Interests the Public Interests."
12. S. Robert Lichter and Stanley Rothman, "Media and Business Elites," *Public Opinion* (November 1981): 42-60; Stanley Rothman and S. Robert Lichter, "The Nuclear Energy Debate: Scientists, the Media, and the Public," *Public Opinion* 5 (August-September 1982): 47-52.
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16. Reinhard Bendix, *Max Weber: An Intellectual Portrait* (Berkeley: University of California Press, 1978).
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23. See for example, Steve Mufson, "Cigarette Companies Develop Third World as a Growth Market," *Wall Street Journal*, 5 July 1985, p. 1.
24. The use of experts by companies to counteract expert testimony against their products represents a new twist to the continuing battle between experts that is so much a part of our political life. The more common pattern is for advocacy groups to seek expert assistance in challenging the technical claims made by firms and agencies in support of new ventures such as the construction of power plants and transportation facilities. See Dorothy Nelkin, "The Political Impact of Technical Expertise," *Social Studies of Science* 5, no. 1 (1975): 35-54, for an analysis of the conflict among experts.
25. Tom Post, "Preserving Endangered Products," *Fortune* 109 (5 March 1984): 70-71.
26. See Robert M. Kaplan, "Behavioral Epidemiology, Health Promotion, and Health Services," *Medical Care* 23 (May 1985): 564-83, esp. table 1, p. 566; Leon S. Robertson, *Injuries: Causes, Control Strategies, and the Public* (Lexington, Mass.: Lexington Books, 1983); Susan P. Baker et al., *The Injury Fact Book* (Lexington, Mass.: Lexington Books, 1984). If the very recent gains in mortality reduction can be extended for several generations, an unlikely prospect, then the toll taken by heart disease would nearly disappear and a significant increase in life expectancy would occur. See John M. Owen and James W. Vaupel, "An Exercise in Life Expectancy," *American Demographics* 7 (November 1985): 36-69.
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28. Robert Evans, "A Retrospective on the New Perspective," *Journal of Health Politics, Policy and Law* 7 (1982): 325-44.
29. Robert M. Kaplan, "The Connection Between Clinical Health Promotion and Health Status: A Critical Overview," *American Psychologist* 39 (July 1984): 755-65.
30. Louise B. Russell, "The Economics of Prevention," *Health Policy* 4 (Winter 1984): 85-100.
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33. "Heavenly Possibilities," *Washington Post National Weekly Edition*, 14 January 1985, p. 39. For a confirming observation see James S. McCormick and Peter Skrabanek, "Holy Dread," *Latent* (24 December 1984): 1455-56.



UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF NEW YORK

-----X  
BLUE CROSS AND BLUE SHIELD OF NEW :  
JERSEY, INC., et al., :

Plaintiffs, :

- against - :

PHILIP MORRIS, INCORPORATED, et al., :

Defendants. :

98 Civ. 3287 (JBW)

-----X  
in  
EXPERT REPORT OF STUART H. ALTMAN, Ph.D.

52434 4188

## EXPERT REPORT OF STUART HAROLD ALTMAN

### QUALIFICATIONS

My name is Stuart Harold Altman. I reside at [DELETED]

I am an economist and currently the Sol C. Chaikin professor of national health policy at the Florence Heller Graduate School for Social Policy at Brandeis University. My Curriculum Vitae (Appendix A) provides a full listing of my educational background, academic appointments, research activities, and other professional activities. I received my M.A. and Ph.D. degree in Economics from UCLA and taught at Brown University and the Graduate School of Public Policy at University of California at Berkeley. In addition, I have served on the Board of The Robert Wood Johnson Clinical Scholars Program and on the Governing Council of The Institute of Medicine. I am the Chair of The Robert Wood Johnson Foundation sponsored Council on the Economic Impact of Health System Change. The Council is a private non-partisan group whose mission is to analyze important economic aspects of the U.S. health care system and evaluate proposed changes in the system.

In 1997 I was appointed by President Clinton to the National Bipartisan Commission on the Future of Medicare. I was Dean of The Florence Heller Graduate School from 1977 until July 1993 and interim President of Brandeis University from 1990-1991. I served as the Chairman of the Congressionally legislated Prospective Payment Assessment Commission (ProPac) for twelve years. ProPac was responsible for advising Congress and the Administration on the Medicare DRG Hospital Payment System and other system reforms. I am a member of The Institute of Medicine of the National Academy of Sciences; a member of the Board of overseers of the Beth Israel Deaconess Medical Center in Boston, Massachusetts; and, Co-Chairman of the Board of the Institute for Health Policy at Brandeis University.

Between 1971 and 1976, I was Deputy Assistant Secretary for Planning and Evaluation/Health at the Department of Health, Education and Welfare ("HEW"). While serving in that position, I was one of the principal contributors to the development and advancement of the Administration's National Health Insurance proposal. From 1973 to 1974 I also served as the Deputy Director for Health of the President's Cost-of-Living Council where I was responsible for developing the Council's program on health care cost containment.

I was a senior member of the Clinton-Gore Health Policy Transition Team. I have testified before various Congressional Committees, most recently on the 1997 Balanced Budget Act and its impact on Medicare spending for hospitals and the health care system.

I have written extensively on the health care system in America. My Curriculum Vitae includes numerous original articles on the changing market for health care as well as the economic pressures on the health care delivery system, and I have contributed to and edited a number of volumes concerned with regulating the health care system. With a colleague, I recently edited *Regulating Managed Care: Theory, Practice, and Future Options*. *Regulating Managed Care* examines the changing market for health care as well as the economic pressures on the health care delivery system.

## INTRODUCTION

The opinions expressed in this report are based on my academic training, publications, on the general literature on issues relating to this report, and my experience with the Blue Cross and Blue Shield plans ("BC/BS Plans") including my employment as a personal consultant on cost containment issues to the President of the Blue Cross Association of America in 1976-77. I have also worked with several of the BC/BS Plans developing cost containment strategies. In connection with the preparation of this report and other activities related to this



case, I will be paid at the rate of \$625 per hour plus expenses. For deposition and trial appearances I will be paid at \$7500 per day.

## I. UNITED STATES HEALTH CARE FINANCING SYSTEM

Medical care is a vital service in every major industrialized nation. Most countries have developed health care financing and delivery systems that are designed to ensure the availability of these services to all their citizens. In most countries their health care financing system is operated and paid for by the government under the umbrella of a national health insurance system. The United States, however, does not have a government operated or mandated health insurance system. Instead, what has developed is a sophisticated and complex health care financing system, which includes both private and governmental insurance. At the core of this system is private voluntary health insurance that provides protection against the high cost of medical care for most working Americans. For low income individuals and families there exists a State/Federal Medicaid system and for those over 65, disabled or suffering from end-stage renal disease the federal government operates the Medicare program. To supplement Medicare most individuals over 65 have some form of additional coverage provided by a private insurance company. Unfortunately, about 18 percent of the US population or 44 million people has no health insurance coverage.

The existence of third party coverage is extremely important as health care can be a very expensive service often costing thousands or even hundreds of thousands of dollars. On average every individual in the United States visits a physician five times a year and one of every six Americans is admitted to a hospital at least once a year. Steven Jonas & Anthony R. Kovner, *Health Care Delivery in the United States* (6th ed. 1999). In total, health expenditures in the US

totaled \$1,092 billion in 1997, which translates into \$3,925 of spending for every individual in the country. John K. Iglehart, *The American Health Care System, Expenditures*, 340 New Eng. J. Med. 70, 72 (1999). In part these high health care costs are a function of a more sophisticated health care delivery system which includes greater availability of high cost equipment such as Magnetic Resonant Imaging (MRI) systems and easier access to expensive procedures such as open heart operations. Steven Jonas & Anthony R. Kovner, *Health Care Delivery in the United States* at 470. Other reasons include: high earnings of most health care professionals; excess hospital beds; a legal system which permits patients to sue for malpractice (an activity which is limited in most countries which operate a national health insurance system); and higher administrative expenses.

Some also contend that health care expenses are significantly inflated because of extensive fraud and abuses throughout the system. While there is little doubt that fraud and abuses exist, most of the high end estimates (20% of total health care spending) focus on abuses which have turned out to be subjective in nature. Attempts to eliminate such abuses (through managed care restraints) have been met with strong resistance from physicians and patients with only limited system-wide savings. Estimates of the amount attributed to illegal fraud are much smaller (less than 10%), and while the uncovering of such fraud usually makes the headlines, the impact on reducing net spending has been small. Kathleen S. Swendiman and Jennifer O'Sullivan, *Health Care Fraud: A Brief Summary of Law and Federal Anti-Fraud Activities*, CRS Report for Congress, Sept. 24, 1997.

Although there is much to criticize, most analysts would agree that the US has developed the most sophisticated health care delivery system in the world. There is also little doubt that such a sophisticated and expensive health care delivery system could not have been

developed or maintained without the existence of a comprehensive third party insurance system. The United States health care financing system must meet the objectives of providing financial protection for those it insures, paying adequate rates to the doctors, hospitals and others that provide health care, and do so at premium levels which employers, government and individuals can afford. John K. Iglehart, *The American Health Care System, Expenditures*, 340 New Eng. J. Med. at 70. Meeting these often conflicting objectives has posed and continues to pose a major challenge. What we have learned is that the quality of services delivered and the organizational approaches developed to deliver services are heavily influenced by how health care is paid for and the aggregate resources available for health care.

## II. HOW MEDICAL SERVICES ARE PAID FOR IN THE UNITED STATES

Ultimately, all of us pay for the health care that is used. While initially the health care service may be paid by a private health insurance company or by a government program in the end it is paid for by all of us. Steven Jonas & Anthony R. Kovner, *Health Care Delivery in the United States* at 35. As workers we indirectly pay for the premiums paid by our employer through lower wages. As taxpayers we provide government with the funds to operate their programs and we also pay health care providers directly through co-insurance rates, deductibles or direct pay. In this manner the costs of health care are spread over virtually the entire population.

The majority of personal health care spending is for hospital and physician services. Spending for physician services was \$218 billion in 1997, which accounted for approximately 20% of all health care expenditures. Katherine Levit et al., *National Health Expenditures in 1997: More Slow Growth*, 17 Health Affairs 99 (1998). The method used to pay physicians influences not only this 20% of the health care bill but also the larger share of health

care costs that are controlled largely by physicians decisions. The traditional method used to pay physicians was some variation of a fee-for-service approach. Under the fee-for-service approach the physician sets a price for each type of service delivered and then the health benefit plan, insurer or patient pays the amount when the service is used. Over the last 10 years several alternatives to the this fee-for-service approach have been developed which include various forms of discounting techniques, or paying a physician a pre-set amount per capita for all the care his patients might use (capitation), or providing a salary for all the time a physician sees patients or performs other medically related activities.

Hospital spending consumes the largest portion of the health care dollar: \$371 billion in 1997, or 38% of spending on personal health services. John K. Iglehart, *The American Health Care System, Expenditures*, 340 New Eng. J. Med. at 73. Most hospitals are not-for-profit community institutions with some part of larger integrated systems. A far smaller number are part of national for-profit hospital chains and the remaining are owned by local or state governments. Regardless of the type of hospital, payments for their services are dictated by the type of payer. Medicare pays hospitals based on a predetermined amount for the total stay of the patient while he/she is in the hospital. The amount paid is determined by the diagnosis of the patient, where the facility is located, and whether it is a teaching or a rural facility. Some state Medicaid programs use the same payment system; others have adopted other forms of payments. Private insurance, particularly managed care plans, rely heavily on discounted per diem payments.

## Private Health Benefit and Commercial Insurance

Regardless of the type of reimbursement used or whether the payments come from a private insurance company or a government program, the funds to pay for the care comes from either premiums or taxes (and a relatively small amount from co-payments and the like). For private insurance, fee-for-service or a managed care plans employers and individuals pay an annual premium for agreed-upon medical benefits. In general, up until the mid 1950s, the premiums charged each enrollee were determined based on the per capita cost of the care used in a designated community (community rating). Since then the premiums charged for an enrollee have been based primarily on the per capita cost of the expenses incurred only by individuals in the enrollees group (experience rating).

As discussed below, some designated insurance companies, almost always BC/BS Plans, charge premiums that include some portion based on overall community expenses so as to spread the costs of high cost cases over a larger population. Thus, the expenses incurred by a specific individual are shared by either all the employees in a firm or all the individuals insured by that insurance company in a community.

The structure of the private health benefit and insurance industry has changed significantly since the 1980s. Before 1980 virtually all private health coverage was provided by either the Blue Cross and Blue Shield system or by commercial insurance companies which offer health care insurance as one of many types of insurance products available to employers. For example, in 1977 this type of insurance accounted for 96% of all policies for those who were covered through their place of employment. Generally such private insurance was sold through groups, rather than individually. Charles E. Phelps, *Health Economics* 38 (2d ed. 1997). The large majority of such groups were developed through the place where an individual worked.

Since 1980, a range of new approaches to health insurance has emerged as health coverage has shifted from traditional unmanaged fee-for-service insurance to more tightly managed plans (managed care plans). In 1998 for example, the proportion of the privately insured population with traditional fee-for-service was only 18%. Jon R. Gabel, *Job-Based Health Insurance, 1977-1998: The Accidental System Under Scrutiny*, 18 Health Affairs 62, 67 (1999). Managed care is any health services arrangement in which a contract for both the services and the payment is created between a provider and a purchaser on behalf of a group of consumers or members. Included among managed care type plans are Health Maintenance Organizations (HMOs) which deliver services on a capitated basis rather than fee-for-service from a limited group of providers; Preferred Provider Organizations (PPO's), which either limit beneficiaries to a set list of physicians or provide economic incentives to use physicians who have offered various discounts to the insurer; and Point Of Service plans (POS) which generally require members to go to providers within their networks for certain services but give them the option to go outside the network for other services.

#### Public Health Insurance System/Role of the Government

Since 1966, the public sector has played an increasingly important role in paying for personal health care expenditures. In 1995 for example, 45% of personal health care expenditures were paid for by the public sector as compared to 22% in 1950. This increase in federal spending is accounted for by the Medicare and Medicaid programs which in 1995, accounted for 80.8% of public outlays for personal health care services. Steven Jonas & Anthony R. Kovner, *Health Care Delivery in the United States* at 40. The Medicare program, established in 1966, is designed to provide a range of medical benefits for persons over age 65 who are covered by the Social Security system. The program is funded from mandatory

contributions by employers and employees, general tax revenues, beneficiary premiums, and deductibles and copayments paid by patients. Part A of the program provides coverage for care rendered in a hospital, an extended care facility, or the patient's home. Part B is a voluntary supplemental program that pays certain costs of physician services and other medical expenses. Neither Part A nor B offers comprehensive coverage, as deductibles are built into the program and limitations on the amount of coverage exist.

Medicaid, established in 1967, is a program run jointly by the state and federal governments. The federal funds are appropriated annually, with the amounts determined by a formula based on each state's per capita income. It is designed specifically to serve the poor and disadvantaged. Medicaid provides federal funds to states on a cost-sharing basis so that qualified low income individuals can be guaranteed medical services. In 1997, Medicaid financed acute care and long term care services for 28.9 million aged, blind, and disabled people with low incomes, as well as poor mothers and children. Robert Kuttner, *The American Health Care System, Health Insurance Coverage*, 340 New Engl. J. Med. 163, 164 (1999). Besides Medicare and Medicaid, the federal government provides hospital and medical services directly to veterans and to the armed forces and military dependents.

State governments are also involved in the direct provision of medical care through the operation of state mental hospitals, medical education programs and the maintenance of state health departments. Because states are important supporters of medical education that often has a significant clinical component, states have been required to become involved in direct delivery of general medical care. Local governments – counties and cities – also finance the direct provision of health care services through public hospitals and clinics whose primary mission is to serve low income persons.

### III. THE BLUE CROSS AND BLUE SHIELD PLANS

There are significant distinctions between BC/BS Plans and other health care insurers. The mission of the Blue Cross and Blue Shield system, similar to that of federal and state governments, is to provide affordable coverage to as broad a range of people as possible. The BC/BS Plans are typically not-for-profit whereas commercial insurers are most often for-profit entities. Some managed care plans are also not-for-profit, but most are for-profit companies. Each BC/BS Plan has its own enabling legislation, by-laws and articles, and board of directors which enables the BC/BS Plan to focus on the local community it serves whereas commercial insurance companies are typically nationwide operations. BC/BS Plans have traditionally sold health care benefit coverage thereby guaranteeing to health care providers that they would be paid for the benefits they provided. Commercial insurance companies, on the other hand, usually sold indemnity policies that paid only a portion of a provider's bill or paid the funds directly to the enrollee and had the patient pay the provider.

#### History of the Blue Cross and Blue Shield System

The earliest types of health insurance plans sold in the US were Blue Cross plans developed by non-profit hospitals in the late 1920s. Robert Cunningham III and Robert Cunningham Jr., *The Blues: A History of the Blue Cross and Blue Shield System* (1997). The founders of Blue Cross believed that Americans would prefer to pay a small monthly premium when they were healthy and working so that when they needed health care the insurance plan would pay the costs. In the mid 1930s, The American Hospital Association (AHA) formally recognized the concept of group hospitalization plans and set standards for any organization wishing to be a Blue Cross plan. Those standards included: emphasis on public welfare; non-profit status; involvement of professional and public interests; and economic soundness.



Paul Starr, *The Social Transformation of American Medicine* 298 (1982). The plans were only to cover hospital charges so as not to impinge upon the domain of the private practitioner.

By 1939 twenty-five states had passed special enabling acts for hospital service plans. The acts provided that a majority of the directors would represent hospitals, gave the insurance commissioners the power to review rates and financial operations, and declared the plans charitable organizations, exempt from taxes. By 1940 the number of plans grew to thirty-nine with a total enrollment of more than 6 million. This constituted over 60 percent of all the private insurance policies sold. An additional 2.3 million persons were privately covered through employer self-insurance programs or from health maintenance organizations. Health Insurance Association of America, *Source Book of Health Insurance Data* 41 (1996). A national Blue Cross office was also established to help coordinate the activities of the various Blue Cross plans and to ensure that each plan met the standards developed by the AHA.

After some initial skepticism about the value of such insurance, the AMA in 1938 approved the concept of a service benefit plan. Paul Starr, *The Social Transformation of American Medicine* at 306. Soon thereafter, groups of physicians in various states established what came to be known as the Blue Shield plans to help pay for physician services.

Despite some differences between Blue Cross and Blue Shield, the plans generally cooperated and often shared administrative facilities. Eventually the plans were marketed jointly to provide coverage for both hospital and physician services. In the 1940s and 1950s the plans began to expand their policies. The dominant practice of the BC/BS Plans was to directly contract with hospitals and physicians to purchase health care services for their subscribers. This practice of the BC/BS Plans was very different from the practices of the traditional indemnity insurance plans. These indemnity plans would reimburse their insured after the fact for health

care expenses that had already been incurred. This reimbursement might or might not cover the total cost of the care. By contrast, the BC/BS Plans sold health benefit plans whereby the plan arranged in advance to directly pay the hospital or physician for the health care services rendered to the plan member at a set premium that covered most or all of the charges for the insured services. Moreover, a BC/BS Plan guaranteed that a provider would get full payment of an agreed upon amount if a covered service was provided to a plan member, whereas indemnity insurance plans often included a number of fees that were required to be paid by the policy holder. In recent years the distinction between health benefit plans and indemnity insurance has narrowed considerably but in some communities differences remain.

The BC/BS Plans were able to engage in prepaid hospital services by contracting with as many community hospitals as possible. These contracts enabled the BC/BS Plans to develop a community-based network of health care providers obligated to treat the health care requirements of the BC/BS Plan's members. Although this mode of operation has continued to the present, it has diminished slightly as an element of the BC/BS Plans business.

The BC/BS Plans, as noted above, were also committed to providing health care to the broadest possible community through a community rating system. In regard, the BC/BS Plans assumed a quasi-governmental role as a promoter of programs to increase the accessibility of affordable health care coverage. Under this rating system, a set of benefits is offered at a single rate to all individuals and groups within a community, regardless of age, sex, health status, or occupation. Basically, the rate represented an averaging out of high and low cost individuals and groups so that the entire community could be served with health care benefits at a reasonable cost. Commercial, for-profit insurance companies use an "experience rating" system charging different individuals and populations subgroups different premiums

based on their use of services. This rating system is very different from the rating practices that were used by BC/BS Plans which has enabled them to provide affordable health care to high-risk individuals. It was not until after the for-profit commercial insurers began to dominate segments of the health insurance market that the BC/BS Plans were forced to question whether their efforts to provide community rating could continue. The problem faced by BC/BS Plans was that the experience rating approach allowed commercial insurance plans to set premiums for relatively healthy employer groups at well below community rates. As a result, those employer groups and individuals that remained in the community rating system were increasingly older and sicker thereby driving up the premium rates. Thus, in the late 1950s the BC/BS Plans started setting rates based more heavily on the claims experience of individual employer groups. Although the dominance of the BC/BS Plans has been reduced by the availability of many new types of health insurance coverage, BC/BS Plans still provide over 72.7 million Americans with health insurance protection today. <http://www.bluecares.com>, *Blue Cross & Blue Shield Plans Report Health Enrollment Gains*, July 6, 1999 (visited Nov. 11, 1999).

The BC/BS Plans are also actively involved with federal government programs acting as Medicare intermediaries processing claims for the federal government. Moreover, as the BC/BS Plans have grown and developed, many states have granted the BC/BS Plan located in their state a "special status" in return for the plan agreeing to provide coverage for certain population groups or lower premiums for low income or hard to insure groups. For example, Massachusetts BC/BS is required to offer supplemental insurance coverage beyond Medicare coverage for people over the age of 65 at a premium amount approved by the state. In other states BC/BS Plans must offer plans for individuals or small businesses at state approved rates.

During the 1970's and 1980's, several states developed hospital rate setting systems to control how much hospitals can charge for their services. Notable examples of these systems were implemented in New York, Massachusetts and Maryland. In the case of Maryland, their hospital costs control system is still in operation today. In each of these states, because of their "special status," BC/BS hospital payments were regulated at the same levels as the payments made by the state Medicaid programs. The payments of all other private insurance plans were set at higher levels. The states justified treating BC/BS Plans differently given the BC/BS Plan's status as the insurer of last resort. An insurer of last resort means that the BC/BS Plans would offer insurance coverage to all who wanted to become a member of the plan. Consequently, many of the BC/BS Plans bore the burden of providing health care to those individuals most in need of medical services and least able to pay for it. In this regard, the BC/BS Plans acted as both a business and an agent of the government providing services to those who would otherwise be without health care financial coverage. Daniel M. Fox, et al., *Between Public & Private: A Half Century of Blue Cross and Blue Shield in New York*, 16 J. Health Pol., Policy & Law 644, 647-48 (1991).

#### **IV THE EFFECT OF TOBACCO RELATED COSTS ON THE HEALTH CARE SYSTEM**


Tobacco related diseases result in very large expenditures by the health care system. Such diseases are particularly expensive because of the kind of medical intervention required, the duration of the illness and the proportion of the population effected by the diseases.

I understand that the types of diseases caused by tobacco use and the cost of that care will be addressed in other testimonies.

Because of the way in which the health insurance industry is structured, the cost of health care for patients who are affected by tobacco related diseases is spread among all the insured in a particular group and in many instances among all of the insured in a particular community. Even for patients who are uninsured, the cost of the care provided by the medical community is passed onto the insured population through higher premiums. This phenomenon is called "cost shifting." Thus, the monetary costs of tobacco related diseases are most often paid not by the party affected directly, but shared by the entire insured population of the community or state. Since the BC/BS Plans are among the largest insurers in most states, it is their subscribers that have borne a disproportionate share of these costs. Thus, the costs of tobacco related diseases are not borne by the tobacco companies or solely by smokers but by all insured persons, smokers and non-smokers alike. When higher costs are imposed on the BC/BS Plans by the need to treat tobacco related diseases, all members or subscribers must bear the cost. Since higher premium costs as a result of tobacco related diseases are on-going, if tobacco companies are required to pay damages to the BC/BS Plans in respect to health care costs associated with smoking, this will be an efficient method of providing additional funds to improve the health care system and/or proportionately make health insurance less expensive for both smokers and non-smokers.

Supplementation

I may supplement this report as necessary based upon additional information.



Stuart Harold Altman

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RESEARCH

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Sol C. Chaikin Professor of National Health Policy, The Heller School, Brandeis University, Waltham, MA, 1977-present.

Dean, The Heller School, Brandeis University, Waltham, MA, 9/77-6/93.

Interim President, Brandeis University, Waltham, MA, 1990-1991.

Chairman of the Board, Institute for Health Policy, Heller School, Brandeis University, 1977-present.

Visiting Lecturer, Graduate School of Public Policy, University of California, Berkeley, 9/76-6/77.

Associate Professor of Economics, Brown University, 1968-1970.

Assistant Professor of Economics, Brown University, 1966-1968.

Visiting Assistant Professor, Institute of Labor, University of Illinois, Spring 1968.

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Chairman, Prospective Payment Assessment Commission, mandated by the U.S. Congress 1984-1996.

Senior member of President Clinton's Health Policy Transition Team.

Chairman, New York State Economic Advisory Group for Hospital Payment System 1979-1982.

Deputy Assistant Secretary for Planning and Evaluation/Health, U.S. Dept. of Health, Education, and Welfare, Washington, DC, 7/71-8/76.

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Economic Consultant and Manpower Economist, Office of Assistant Secretary of Defense, Washington, DC, 1964-1966.

Labor Market Economist, Federal Reserve Board, 1962-1964.

#### PRIVATE SECTOR:

University Fellow and Director of Health Studies, The Urban Institute, Washington, DC, 1976-1971.

#### HONORARY SOCIETIES

Member of the Institute of Medicine of the National Academy of Sciences.

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Who's Who in Health Care.

#### ADVISORY BOARDS

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Member, National Bipartisan Commission on the Future of Medicare, 1997 to 1999.

Member, Military Health Care Advisory Committee to the Department of Defense, 1995 to 1997.

Chairman, Committee to Study the Organization of University of Massachusetts Medical Center, Office of the Governor, Commonwealth of Massachusetts, 1988.

Co-Chair, Blueprint 2000: Human Services Support Subcommittee, Commonwealth of Massachusetts, 1988.

Blue Ribbon Panel on Sizing, Department of Defense Medical Treatment Facilities, Department of Defense, 1985.

Consultant, President's Commission for a National Agenda for the Eighties, 1980.

Chairman, Health Institution Reimbursement Methodology Panel, New York State, 1978-1983.

Member, Technical Advisory Panel on Financing of Graduate Medical Education, Dept. HHS, 1981.

The Presidential Commission for an All-Volunteer Armed Force, 1969.

The National Commission for the Study of Nursing and Nursing Education, 1969.



The Presidential Commission on Income Maintenance, 1968-1969.

The National Advisory Commission on Selective Service, 1966.

The Department of Defense Study of the Draft, 1964.

#### **PRIVATE SECTOR:**

Member of the Board of Directors, CurranCare, North Riverside, IL, 1999 – present.

Member of the Board of Directors, OrthoLogic, Tempe, AZ, 1998 – present.

Member of the Board of Directors, HIP, New York, NY, 1997 – present.

Member of the Board of Directors, IDX, Burlington, VT, 1995-present.

Member of the Board of Directors, LifePlans, 1992 – 1998.

Member of the Board of Directors, American Biodyne, Inc., San Francisco, CA, 1991-1992.

Member of the Board of Directors, Medstat, Ann Arbor, Michigan, 1989-1994.

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Overseer, Beth Israel Deaconess Medical Center, 1997 to present.

Member of the Patient Care Assessment and Quality Committee, Beth Israel Deaconess Medical Center, 1996 to present.

Member, Board on Health Care Services, Institute of Medicine, 1996-present.

Member of the National Board, The Robert Wood Johnson Foundation Scholars in Health Policy Research Program, 1995-present.

Member, The National Coalition for Health Care Reform, 1990-present.

Board of Directors of the Health Care and Policy Institute, BlueCross Blue Shield of Massachusetts, Boston, MA, 1997.

Member of the Board of Trustees, Alpha Center, 1989-1993.

Member of the Board of Directors, The Better Homes Foundation, Help for Homeless Families, 1989-1991.

Chairman, Advisory Committee, Massachusetts Saving Lives Program, Commonwealth Fund, 1988-1991.

Member, Board of Trustees, Beth Israel Hospital, 1977-1997.

Executive Board, American Jewish Committee, 1986-1991.

Member, The National Leadership Commission on Health Care, 1986-1990.

Member, Board of Directors, The Social Policy Research Group, 1986-1988.

Governing Council, Institute of Medicine, National Academy of Sciences, 1982-1983.

Member of the Board, The Robert Wood Johnson Foundation Clinical Scholars Program,  
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#### EDITORIAL BOARDS

The Medstat Report, MEDSTAT Systems, MI.

Wyeth-Ayerst Digest of Hospital Economics, HLS, NJ.

Nursing Economics, Anthony J. Jannetti, Inc. Publisher.

Compensation and Benefits Management, Aspen Systems.

Health Policy, Elsevier Science Publishers.

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"The Impact of Hospital Conversions on the Health Care Safety Net," with D. Shactman, The Future U.S. Healthcare System: Who Will Care For The Poor and Uninsured, (Health Administration Press, 1997).

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"Public Policy Issues In Nonprofit Conversion: An Overview," with G. Claxton, J. Feder, and D. Shactman, Health Affairs, (March/April, 1997), 16(2).

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May 24, 1995, Before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives.

February 6, 1995, Committee on Ways and Means, U.S. House of Representatives.

April 25, 1994, Before the Finance Committee, U.S. Senate.

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March 18, 1993, Before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives.

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May 7, 1992, Before the Finance Committee, U.S. Senate.

April 8, 1992, Before the Subcommittee on Health, Committee on Ways and Means, U.S. House of Representatives.

March 4, 1992, Before the Committee on Labor and Human Resources, U.S. Senate.

November 19, 1991, Before the Committee on Governmental Affairs and Special Committee on Aging.

October 17, 1991, Before the Subcommittee on Health and Environment, Committee on Energy and Commerce, U.S. House of Representatives.

October 9, 1991, Before the Committee on Ways and Means, U.S. House of Representatives.

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February 28, 1990, Before the Senate Appropriations Committee.

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August 21, 1978, Before the Small Business Subcommittee, U.S. Senate on The Containment of Health Care Costs.

April 26, 1978, Before the Subcommittee on Health and Environment, Committee on Interstate and Foreign Commerce.

March 11, 1977, Before the Committee on the Budget, U.S. Senate on control of Health Care Costs.

#### OTHER TESTIMONY

August 22, 1997, testified at trial in United States v. Long Island Jewish Medical Center & North Shore Health Systems Inc., CV97-3412.

April 18, 1996, testified at trial in Lewistown Hospital et al. v. Mifflin County Board of Assessment Appeals et al., CV 1012.



UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF NEW YORK

-----X  
BLUE CROSS AND BLUE SHIELD OF NEW :  
JERSEY, INC., et al., :

Plaintiffs, :

- against - :

PHILIP MORRIS, INCORPORATED, et al., :

Defendants, :

98 Civ. 3287 (JBW)

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in

HUMPHREY

EXPERT REPORT OF STUART H. ALTMAN, Ph.D.

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SUPPLEMENTAL EXPERT REPORT OF STUART HAROLD ALTMAN

My name is Stuart Harold Altman and I have been retained as an expert in the case brought by Blue Cross & Blue Shield of New Jersey, Inc., et al., against Philip Morris, Incorporated, et al. I am submitting this report to supplement the expert report I previously submitted in this matter, dated November 15, 1999 (the "November 15, 1999 Report"). I will discuss herein my opinion concerning steps taken by the tobacco industry to prevent or discourage insurers from utilizing or promoting non-smoker premium discounts (or other measures to modify tobacco-related pricing of insurance products), wellness programs, "smoke-free environments," or similar measures aimed at reducing smoking and the associated medical costs. This was a fraud aimed directly at insurers. In rendering my opinions and testimony in this action, I will also address certain points made by Harvey M. Sapolsky in his expert disclosure and testimony herein.

The November 15, 1999 Report sets forth my background and credentials. The opinions expressed in this Supplemental Report are based on my academic training, publications, the general literature on issues relating to this report, documents produced in this litigation, and my experience with the Blue Cross and Blue Shield plans ("BC/BS Plans"), and my employment as a personal consultant on cost containment issues to the President of the Blue Cross Association of America in 1976-77. In connection with the preparation of this Supplemental Report and other activities related to this case, I will be paid at the rate of \$625 per hour plus expenses. For deposition and trial appearances I will be paid at \$7500 per day.

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In my November 15, 1999 Report I stated that I might supplement my expert report as necessary based upon additional information. I reserve the right to further supplement my expert report as additional information becomes available.

### Historical Perspective

During the 1970s there were discussions within the U.S. government concerning the introduction of differential pricing for health insurance based on behavioral characteristics. As stated in my November 15, 1999 Report, during the period between 1971 and 1976, I was Deputy Assistant Secretary for Planning and Evaluation/Health at the Department of Health, Education and Welfare ("HEW") and was one of the principal contributors to the development and advancement of the Administration's National Health Insurance proposal. Additionally, from 1973 to 1974, I also served as the Deputy Director for Health of the President's Cost-of-Living Council where I was responsible for developing the Council's program on health care cost containment. Consequently, I was directly involved in efforts to change the health care system during the 1970s which included discussions to modify the underwriting criteria for health insurance by changing extra premium payments for individuals with certain behavioral characteristics which generated higher medical expenses, such as smoking.

Efforts to introduce differential pricing for health insurance based on behavioral characteristics, such as smoking, met with opposition from a variety of groups and sources. As discussed in further detail below, and unknown to me at the time, the tobacco industry engaged in an operation aimed at hindering, delaying or preventing premium differentials or premium discounts for non-smokers. The documents produced by the tobacco industry also indicate that the defendants attempted to counter workplace smoking restrictions and the implementation of wellness programs by health insurers. It appears that these actions were part of an effort by the

tobacco industry to hinder health insurers from taking steps that could have partially protected them from the financial consequences of smoking-related illnesses among their insureds and the increased expenditures for smoking-related illnesses that they incurred.

In my opinion the tobacco industry's efforts to prevent third-party payers of health care costs from adopting premium discounts for non-smokers, wellness programs and smoking restrictions were aimed at preventing third parties, including the BC/BS Plans, from taking steps that would have reduced their health care expenses and ultimately lowered the premiums paid by all insured policyholders. Given the competitive nature of the health insurance industry, the tobacco companies' efforts to prevent any given health insurance company from offering non-smokers premium discounts and to thwart the implementation of wellness programs and workplace smoking restrictions affected other insurance companies. Documents produced by the tobacco companies demonstrate that the tobacco companies engaged in activities specifically aimed at influencing insurance companies, including the BC/BS Plans.

It is also my opinion that by preventing insurers from making premium and/or coverage adjustments based on smoking status, the tobacco companies' conduct had a pernicious effect on smokers. Absent distinctions between individuals' smoking behavior in insurance pricing, smokers are not accountable for the proportionate increased medical costs caused by their smoking behavior. In other words, smokers do not internalize the medical costs of their smoking habit. As a result, smokers face little or no financial incentive to curb or eliminate their smoking consumption from a knowledge that they will have to pay disproportionately higher premiums based on their smoking behavior. The tobacco industry sought to maintain consumption levels of cigarettes and other tobacco products by preventing insurance pricing adjustments based on smoking status.

Similarly, the tobacco companies' efforts to prevent the implementation and proliferation of workplace smoking restrictions or smoke-free environments (discussed in further detail below) affected health insurers because, absent such limitations, smokers were free to engage in behavior that led to increased health care costs which were ultimately paid for by health insurance companies such as the BC/BS Plans.

Additionally, based on my knowledge of the Surgeon General reports and medical research in general, I am of the opinion that the statements the tobacco companies made in trying to prevent premium discounts and curb the implementation of wellness programs and workplace smoking restrictions were misleading. The tobacco industry mischaracterized the facts about smoking and health. The industry also colored its efforts as being for the benefit of smokers and avoiding discrimination against them but it failed to mention that such actions increased or avoided a decrease in smoking to preserve their profits.

#### Life Insurance Premium Discounts For Non-Smokers

During the early 1960s, life insurance companies began to offer premium discounts to non-smoking individuals. Although it now appears that the tobacco companies knew that there was a link between smoking and illness and premature death, the tobacco industry tried to discourage life insurance companies from offering such discounts.

These efforts included undermining the scientific data on which the premium discounts were based and targeting life insurance companies as the intended audience of the tobacco companies' message. The tobacco companies knew that a variance in life insurance premiums could in fact be actuarially justified.<sup>1</sup> A December 9, 1985 memorandum from Jack

<sup>1</sup> For example, in 1985 one of Philip Morris' benefits consulting firms had been asked to determine whether there was an actuarial basis for varying premiums on life insurance between smokers and non-smokers and had concluded that a twenty percent variance in life insurance premiums could be actuarially justified.  
(continued on next page)

Nelson to Guy L. Smith states that the State Mutual study (which set forth an actuarial basis for differentiating between smokers and non-smokers) was "weak" actuarial work and relied on the Surgeon General's reports. The memorandum, which posits the tobacco industry's position that "more research was necessary," concludes by stating: "Nonetheless, our situation remains difficult as long as recognized medical authorities maintain that smoking causes disease and shortens life."

The tobacco companies' efforts to hinder or prevent life insurance companies from offering non-smoker premium discounts continued into the 1980s. In my opinion this was a systematic effort by the tobacco industry to prevent insurers, whether health or life, from implementing steps that would have caused less smoking -- thus lowering the costs sustained by the health care system, and payments by the insurers.

For example, in 1980, The Tobacco Institute corresponded with Occidental Life Insurance Company ("Occidental") regarding certain advertisements urging smokers to quit smoking and offering a "health discount" to non-smokers in certain insurance plans. The Tobacco Institute advised Occidental that it was "impossible to reconcile" the statistics used in its advertising with published scientific reports and that "[i]t should be emphasized that smoking has never been scientifically proven to be the cause of any disease, and many scientists have so stated. Thus, the advertisement appears to oversimplify serious health questions and might mislead the public." (January 31, 1980 letter from Horace B. Komegay (The Tobacco Institute) to Mino T. Lake (Occidental), 0066720-722.) These statements have been shown to be false and

*(continued from previous page)*

(2024264158) Despite its knowledge of the link between smoking and premature death, the tobacco industry continued its efforts to undermine the actuarial basis for non-smoker discounts.

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misleading. The Tobacco Institute sought to prevent further dissemination of the advertisement: "We assume that the above information may not have been available to those who prepared and authorized your current advertising and that in light of this information you will agree that further publication is unwarranted." (0066721-722.)

### Health Insurance Premium Discounts For Non-Smokers

While the efforts of the tobacco industry to prevent non-smoker discounts were in large part successful in the 1970s and the 1980s, by the late-1980s and early 1990s events began to change. Following the introduction of life insurance premium discounts for non-smokers, health insurance companies considered whether smokers should pay a higher insurance premium than non-smokers.

By the mid-1980s a number of commercial health insurers in the U.S. -- including BC/BS Plans -- had attempted to modify pricing of insurance products to account for differences in smoking status. Several of the BC/BS Plans in this case did implement smoker premium differentials or other measures to classify insurance risks as a result of smoking (i.e., by adjusting underwriting criteria in medical underwriting of individual insurance products to account for applicants' smoking status); others, however, did not, at least in part, it now appears, due to the activities of the tobacco industry.

By the early 1990s, while more health insurance companies were pricing certain products to account for their insureds' smoking status, a significant portion of health insurance companies did not sell individual health policies that employed smoker/non-smoker pricing differentials. Also, in those instances in which health insurance companies sold health policies with a non-smoker discount or smoker surcharge, those product features were almost exclusively limited to products sold to individuals and not group health insurance. In certain states, BC/BS



Plans have been prohibited from implementing premium differentials by law. Here too, the evidence now shows, the tobacco industry worked behind the scenes to pass such laws. (See discussion below.)

Recent data suggests that 85% of Americans with private health insurance are insured through employer-provided group insurance policies.<sup>2</sup> Because, in part, of the actions of the tobacco industry, few health insurers have been able to implement pricing differential mechanisms for tobacco use in their group insurance products.

The tobacco companies were aware in the 1980s that BC/BS Plans and other health insurers were beginning to implement smoker pricing mechanisms. Internal documents produced by the tobacco companies indicate that they monitored which insurance companies were implementing differential pricing by, among other things, devising projects to track which health insurers were offering products with smoker pricing differentials. This also put pressure on those insurance companies contemplating such changes to reconsider their decisions. This effort followed the tobacco companies' tracking of life insurance company practices in the early 1970s.

In my opinion, the tobacco companies engaged in an effort to oppose health insurance premium discounts for non-smokers and sought to shift the focus away from the higher medical costs of smokers by depicting such discounts as "smoker mark-ups" which "unfairly discriminated" against smokers. The tobacco companies stated that such offers were "questionable" because they lacked scientific support and were discriminatory because it was

<sup>2</sup> This figure highlights the importance and detrimental effect of the tobacco companies' efforts to prevent the proliferation of workplace smoking restrictions. Obviously, had such restrictions been widely enacted, the incidence of smoking would have been lowered, thereby reducing the medical costs absorbed by health insurance companies.

"unfair" to penalize a particular group of individuals based on their behavioral choices. The tobacco companies made "slippery slope" arguments -- even in their publications -- aimed at convincing the American public that if smokers were forced to pay higher premiums, others may soon have to do so as well.

One way in which the tobacco industry undermined proposals aimed at discounted health insurance premium rates for non-smokers was by analogizing between the increased risks associated with smoking and those associated with poor nutrition, alcohol consumption, high fat diets, lack of exercise, obesity and even certain types of activity -- such as skiing -- likely to result in certain types of injuries. Here, as with other tobacco industry actions, many such statements were aimed at shifting the focus away from the fact that smoking was by far the most significant personal behavior or activity generating higher medical expenses -- expenses that ultimately were paid by all policyholders. The tobacco companies furthered this type of argument by stating that requiring insureds with a heightened risk of illness to pay an additional premium would result in "the complete control of the individual's activities, which, in practice, could not be managed by known administrative methods" ("Smoking and Health: Insurance Premiums and Smoking," 500269026), and would lead to differential pricing for individuals in other groups at a purportedly higher risk for illness.

Some examples are:

- A November 30, 1977, letter from F. Hudnall Christopher, Jr., a Vice President at R.J. Reynolds Tobacco Company ("RJR") to Arthur J. Stevens at Lorillard which states: "Also, as I am sure you have seen, Blue Cross is running an ad campaign addressed at rising medical costs, which they claim are due to excessive eating, drinking,

working, smoking, etc. At least there is one consolation in that we are included in a group of items, not singled out." (00493898)

• A June 4, 1991 Philip Morris memorandum authored by Robert Gotti which states: "Health insurers are increasingly offering differential rates for smokers and nonsmokers. . . . We already know of some companies that charge differential rates for those who are overweight. Maybe someday, in the not too distant future, there will be a surcharge on the purchase of ski lift tickets to cover the costs associated with skiing injuries. Just something to keep in mind when confronted with the argument of differential health premiums." (2023259315)

• A March 1977 paper entitled "Smoking and Health: Position Paper of the Cigarette Industry Association" (1005145958-985) which states: ". . . this would abolish the principle of solidarity valid for all forms of social insurance . . . according to which the payment rate is based on the economic productivity of the individual and not on his personal risk of illness. Abolishing the principle of solidarity would mean nothing less than a renunciation of the social progress made until now. Moreover, insurance experts agree that it would be organizationally and administratively impossible, unthinkable, and to the highest degree detrimental to the development of personal liberty if a kind of bureaucratic health supervision of the individual were to be instituted. The courts would have to expect an avalanche of

litigation brought about by insurance subscribers suing insurance companies. The so-called rehabilitation surcharge in the form of a "smoker's penny" also lacks relevant basis. It would be justified only if a scientifically proven cause-effect relationship existed. But such a relationship between smoking and illness, based on the principle of an originator, does not exist." (1005145959-960)

The tobacco companies prepared various documents and reports aimed at discouraging the health insurance industry's efforts to provide non-smoker discounts. The tobacco companies' strategy with respect to premium differentials is summarized in an internal document from The Tobacco Institute, the tobacco industry's lobbying and public relations enterprise: "Our Goal -- To Increase Their Awareness of 'Non-Smoker' Insurance Discounts as a Misleading Marketing Gimmick."

In its 1983 "Preliminary Draft Communications Plan" (690129916-937), The Tobacco Institute suggested the identification of tax attorneys and "tax resistance groups which might become part of our tax program" to thwart efforts to increase taxes on cigarettes and tobacco products. Similarly, a 1991 memorandum entitled "Discouraging Health Insurance Industry Discrimination Against Smokers" identifies as a "tactic" to "[i]dentify insurance reform activities and encourage them to increase public awareness of need to discourage the insurance industry's unfair discriminatory practices." (512565193-5205)

The tobacco companies' internal discussions concerning the evolving phenomena of differential pricing in the insurance industry, and their legislative and lobbying efforts (discussed below), were supplemented by direct action in the marketplace. Direct contact with insurance companies was complemented by direct communications with management and

benefit administrators at group employers. This strategy dovetailed with a media campaign assailing discriminatory practices against smokers.

### The Tobacco Industry Tried to Counter the Implementation of Workplace Smoking Restrictions and Wellness Programs

Since the majority of Americans are covered by employer-provided health insurance or governmental health programs, health insurance companies tried to control expenses by having employers institute certain safeguards such as workplace smoking restrictions which could reduce the incidence of smoking and the resulting medical costs. As with premium discounts for non-smokers, the tobacco industry characterized such restrictions as "unfairly discriminating" against smokers (as opposed to benefiting all by reducing smoking and second-hand smoke exposure) and tried to prevent their implementation -- despite the fact that they knew that ambient smoke harmed non-smokers. In fact, the tobacco companies knew that publicity generated by workplace smoking restrictions could "only serve to reinforce the discriminatory climate towards smokers and, as [their] own market research ha[d] shown, this [was] a significant threat to [their] future business success." (See memorandum dated October 11, 1985, from Fred J. Lutz to Hamish Maxwell, produced by Philip Morris, 2024273870.) Despite their efforts to counter workplace smoking restrictions, the tobacco companies knew that "there [was] an increasing weight of medical opinion accepting a link between passive smoking and certain risks to health." (See attachment to September 28, 1992 memorandum from Dr. S. Boyse regarding Association of British Insurers and Employer Liability.)

Health insurers could have protected themselves by implementing wellness programs aimed at getting individuals to take better care of themselves, thereby reducing health care costs, and offering discounted rates to insureds instituting restrictions on smoking in the

workplace. The tobacco industry tried to, and at least was partially successful in, hindering insurers' efforts to protect themselves in this manner.

A March 13, 1991 internal Philip Morris memorandum from W.K. Pember to S.C.

Darrah addresses the smoking policy at BC/BS of Virginia. (2021205334-335) The memorandum notes that the BC/BS office had been under pressure to establish a no-smoking policy and that although the office had decided not to change its current policy (which was predicated on common courtesy) it had decided to post a "no smoking" sign in the customer service area based on an opinion from its legal department. According to the memorandum, Philip Morris had a dedicated representative following this issue who would advise Pember of any future changes in the policy. This memorandum, and others like it, demonstrate the tobacco industry's efforts to closely monitor the implementation of workplace smoking restrictions.

The tobacco companies retained attorneys to determine the legal implications and vulnerabilities of privately imposed restrictions on smoking in the workplace. One such legal memorandum prepared by Covington & Burling, dated August 31, 1983, states that "the only antismoking policies that may be subject to successful legal challenge are those that affect unionized employees" or that can be shown to disproportionately affect employees who are otherwise protected by anti-discrimination laws. The memorandum identifies three possible courses of action, including encouraging unions to resist the imposition of workplace smoking restrictions that affect their members and to bring suits against employers that adopt such restrictions unilaterally; the memorandum further provides that the tobacco "industry also could offer to fund such lawsuits." The other courses of action were the preparation of a position paper for distribution to companies considering antismoking policies and continuing the "present policy of responding on an ad hoc basis to companies that are concerned about" workplace

smoking restrictions and sought the industry's views on the legal implications of such restrictions. (Based on the documents I have reviewed, and as discussed below, it appears that the tobacco companies largely pursued the ad hoc approach.)

Documents produced by the tobacco companies establish that they had press clippings relating to no-smoking policies and workplace smoking restrictions in their files, and that they were concerned about giving business to insurance companies implementing such policies. For instance, a press clipping from the Atlanta Constitution relating to the implementation of a no-smoking policy at Aetna Life & Casualty Co. ("Aetna"), was produced by Philip Morris. (2024264241) The document has a handwritten note which states: "Maybe they can do without our business!" (Emphasis in original.) An internal memorandum dated October 11, 1985, from Fred L. Laux to Hamish Maxwell demonstrates that Philip Morris took Aetna's actions so seriously that it reconsidered whether its employees should be "asked to deliver their tobacco-earned dollars to a Company [Aetna] that is now proactively trying to put them out of their jobs." (2024273870-872) The October 11, 1985 memorandum expresses frustration that Aetna's policy went beyond Connecticut's statutory requirements and states:

Aetna's handling of this issue revealed a complete insensitivity to our needs and concerns. After our long and congenial business relationship, it is revealing that we would not be given the courtesy of at least prior notification if not prior review. Furthermore, it is stated in Aetna's administrative guidelines that the potential impact on their tobacco policyholders had been considered. If, after such consideration, The Aetna continued to proceed [sic] in such an insensitive manner, it can only be concluded that their tobacco industry policyholders were a secondary priority to their greater desire to move to the forefront of the anti-smoking campaign.

(2024278870)

The tobacco companies also made statements to the effect that cost containment or risk management programs which recommend non-smoking clinics and workplace smoking policies as a means of containing health premium expenses were another example of the health insurance companies' discrimination against smokers. ("Discouraging Health Insurance Industry Discrimination Against Smokers," 512565193-5206.) The Tobacco Institute also took steps on behalf of the tobacco industry to respond to anti-smoking campaigns that it viewed as "damaging to the tobacco industry" regardless of the ill effect on smokers' health. ("Preliminary Draft Communications Plan," dated September 21, 1983, 690129916.)

As part of their program to prevent restrictions or outright bans on smoking, the tobacco companies monitored the implementation of workplace smoking restrictions. As recently as 1990, RJR's Manager of Field Operations authored a memorandum concerning Boeing Commercial Airplane Company's ("Boeing") decision to ban smoking in its office buildings. (December 9, 1990 memorandum from M. Smith to T. Hyde, 507678758-8762.) The memorandum, and others like it, show that RJR management monitored the extent of smoking restrictions in various industries and directly recommended actions that employees might take to reverse bans on smoking.

In addition to monitoring the extent of restrictions on smoking, tobacco companies took a wide range of direct steps to counter workplace smoking restrictions. In Boeing's case, at the individual level, they provided a Boeing employee with the names of leaders of smokers' rights groups and, though RJR's memo notes "we've got to be careful that we don't encourage any action that could make us liable in the future [if Boeing employees] lose there [sic] jobs," RJR also sought to meet with groups of employees who smoked to encourage them to take action. ("RJR Partisan Movement: Weekly Activity Report," dated July 24, 1991,



507697712-7721.) Documents show that RJR's "field correspondents" tried to get RJR's management to "help" elderly smokers suing an apartment management agency because they could no longer smoke in the senior citizen complex where they resided. (Id.) The tobacco companies' grassroots efforts to prevent workplace smoking restrictions included inciting and encouraging letter writing campaigns against smoking bans and organizing meetings of smokers at companies implementing such restrictions to "[come] up with ideas on how to fight these bans." (See id.) Other efforts included meeting with legislators and elected officials as well as funneling funds to those individuals' pet projects.

In Boeing's case, RJR contemplated direct CEO to CEO contact between itself and Boeing and noted that "[w]hile RJR is not a customer of Boeing in the way we have leverage with IBM, it is suggested that we conduct additional research to determine who sits on the board of directors of the parent company -- and look for allies." (December 9, 1990 memorandum from M. Smith to T. Hyde, 507678758-8762.) Finally, RJR's memo states that "[v]ia RJR Washington Office, we might consider what allies on Capitol Hill could make a few well placed phone calls. More than a few taxpayer dollars go to Boeing and its [sic] reasonable to think that Boeing might be receptive to the concerns of tobacco-land Senators and Congressmen, especially those who have oversight [sic] responsibilities." Id. Notably, RJR's memo notes that at some point it would have to decide whether its attempts to thwart smoking restrictions at Boeing would be "an RJR action, or, if feasible, an industry effort." Id.

The tobacco companies' efforts to prevent or limit workplace smoking restrictions frequently proved successful. An RJR field correspondent reports in a "Weekly Activity Report" that, with the aid of information provided by RJR, "Smokers Rights goodies we pass out, and with some of the specialized materials I've created for him with the desktop publishing stuff I've

got in WordPerfect, he was able to create enough stir at the V.A. Medical Center in Huntington, West Virginia to get them [to] reestablish the smoking areas that the have [sic] previously eliminated!!!!" ("RJR Partisan Movement: Weekly Activity Report," dated July 24, 1991, 507697712-7721.) RJR's field correspondent adds that although West Virginia "ain't [his] state . . . [he]'ll take credit where credit's due." (Id.) These types of documents show an effort by the tobacco companies to prevent the implementation of workplace smoking restrictions that could have reduced the number of individual smokers or the number of cigarettes smoked by smokers, thereby reducing illness and death and health care costs absorbed by the BC/BS Plans.

Documents show that the tobacco companies also identified and followed health insurers that offered coverage for nicotine patch treatment -- a treatment aimed at getting individuals to cease smoking.

#### Educational Pamphlets

Certain insurance companies prepared educational pamphlets for their subscribers regarding the risks involved with smoking. Documents produced by the tobacco companies show that the tobacco companies had input regarding the content of such pamphlets and, in certain instances, were able to cause the alteration of the content of the pamphlets to promote their interests. For instance, a memorandum dated June 17, 1963 prepared by the Tobacco Institute Research Committee ("TIRC") states:

We were joined at luncheon [sic] by Dr. Wheatly, who is Metropolitan's man in charge of educational pamphlets. . . . The Metropolitan is revising its pamphlet on cancer and I was shown the brief statement on smoking. This mentions "excessive" smoking as the matter of concern to the general public. It says that in view of statistical and epidemiological associations "authorities" advise teen-agers not to smoke. I succeeded in getting them to change the phrase that "tobacco was implicated" to the phrase "association with tobacco." (My recollection of the detailed

content of the paragraph is, of course, not completely exact but my impression is that we cannot fairly disagree with it as a public health document in its proposed form.)

(File memorandum dated June 17, 1963, 11309238-239.)

Similarly, electronic mail communications between Lisa Halle (Philip Morris USA) and Cristy A. Plawecki (CIGNA) show that Philip Morris had the right to delete (or "skip") articles from the CIGNA newsletter circulated to its employees (CIGNA policyholders) and to edit the articles in those newsletters. For instance in 1997, Philip Morris decided to "skip" several articles which contained anti-smoking references and articles which contained an "objectionable secondhand smoke reference." (May 30, 1997 Philip Morris memorandum from Lisa Halle to Distribution List, regarding "CIGNA Well-Being Newsletter - Future Strategy.") As recently as 1998, Philip Morris requested that CIGNA edit an article on coping with children's ear infections by deleting reference to the fact that children exposed to secondhand smoke were more likely to get such infections. (E-mail message sent on February 4, 1998, from Lisa Halle (Philip Morris USA) to Cristy A. Plawecki (CIGNA) regarding CIGNA's Spring 1998 "Well-Being" Issue.)

Documents produced by the tobacco companies show that they communicated with health insurance companies concerning these issues. Their efforts to thwart programs or policies which could decrease the consumption of cigarette or other tobacco products included writing letters to insurers planning anti-smoking advertising campaigns.<sup>3</sup>

<sup>3</sup> For instance, on February 12, 1968, Philip Morris wrote to the President of Group Health Insurance, Inc. concerning its plan for an advertising campaign against cigarette smoking. (2024922723-724) The letter states: "I think there are serious questions about the propriety of an insurance company sponsoring such a campaign" and that the implication of the message was not justified on the basis of the scientific findings relating to smoking and health given the fact that the medical controversy over the possible health consequences of cigarette smoking is "far from resolved." The letter enclosed documents (some of which were marked to show areas of particular interest) allegedly demonstrating that "no valid inference of a causal connection can be drawn on the basis of present data" and offered to provide any additional materials or references.

### Legislative and Lobbying Efforts

The documents also indicate that tobacco companies targeted insurance regulators, federal and state legislators and insurance company officials as "audiences" for their arguments concerning what they termed smoker "discrimination" and actively attempted to influence such decision makers.

The tobacco industry followed bills and other legislative proposals (on both a federal and state level) which involved tobacco or related interests as well as provisions in bills that would extend the power of the FTC or place tobacco under the control of the FDA or another regulatory agency. Frequently, its lobbying efforts succeeding in eliminating unfavorable provisions from bills and legislation.

The tobacco industry also closely observed legislative efforts to implement health insurance premium discounts for non-smokers and attempted to prevent such legislation. For example, one of RJR's "Weekly Activity Reports" refers to legislation which was introduced in Ohio (Ohio House Bill H478):

Unfortunately, [sic] for us, this bill includes language that would mandate that health and accident policies contain a provision for a premium reduction for persons who are non-smokers. [An] Ohio RJR lobbyist [] tells me not to worry about this right now. He thinks there is a good chance that he and the other tobacco lobbyists can keep this bottled up in the Insurance Committee and that there is nothing for me to do on this right now.

("RJR Partisan Movement: Weekly Activity Report," dated July 24, 1991, 507697712-7721.)

The tobacco industry's strategy included (i) identifying potential allies, such as labor unions, in its effort to thwart efforts to increase taxes on cigarettes and tobacco products and (ii) attempting to convince the public of a need to discourage the insurance industry's "unfair

discriminatory practices." The tobacco companies expected that activists could potentially testify in legislative hearings on insurance-related bills and at rate hearings by insurance regulators.

The tobacco industry's steps to have its industry influence other industries were successful. For instance, the tobacco industry's lobbying efforts enabled it to prevent insurance companies from introducing non-smokers policies. The tobacco companies also targeted insurance companies which took positions on pending legislation which they viewed as contrary to their interests. For instance, as recently as July 1991, RJR wrote to the Chief Executive Officer of Aetna Health Plans, a major provider of RJR's health claim processing, concerning the fact that Aetna appeared as a supporter of The Tobacco Product Education and Health Protection Act. Aetna's response apologized for the fact that "Aetna appeared as a supporter of legislation offensive to [RJR's] interests" and stated that they would work "to see that this kind of incident is not repeated." (507771528-529) The internal RJR memo attached to the letter states: "We really hit them hard and as you can see from the attached letter it had an impact. I guess we just keep in there swinging." (Id.)

The internal documents that I reviewed also demonstrate that the tobacco companies took steps in the early 1990s to prepare for legislative battles to create a national health insurance program. This was an activity that I was directly involved in as a Senior Member of the Clinton/Gore Health Transition Group. For example, with respect to the community rating debate, a RJR document states:

At some point, law-makers and regulators will need to determine what criteria can be legitimately used by the insurance industry for underwriting practices. Certain factors, such as age, will have to be deemed as reasonable criterion on which to underwrite. To ensure that smoking is not among these, a defensible body of data

needs to be developed which proves that there is no legitimate foundation for the assumption that smokers incur higher medical costs.

("Discouraging Health Insurance Industry Discrimination Against Smokers," 512565193-5206.)

Supplementation

As stated above, I may supplement this report as necessary based upon additional information.

Stuart Harold Altman  
June \_\_, 2000

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in

EXHIBIT

# Empire and the Business of Health Insurance

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**Abstract:** I examine the development of privately provided insurance since World War II, giving special attention to Empire Blue Cross, and argue that the competition between employers and unions for the loyalty of workers after the passage of the Taft-Hartley Act helped diffuse private health insurance benefits already favored by federal policies. For-profit insurers did not challenge the privileged status of Blue Cross plans because they recognized the political benefits that the plans offered and because they did not wish to offend the plans' sponsors. A relatively easy and profitable business, health insurance has been greatly disturbed by the system inflation accompanying the introduction of Medicare and Medicaid programs. Now self-insurance and various managed-care schemes are major threats. The future may bring consolidation and the strengthening of pools, just the opposite of today's system fragmentation.

The federal government's role in shaping the structure of the American health care system is widely acknowledged, especially its emphasis on the private provision of health insurance. In the 1940s, for example, several federal actions, not necessarily calculated for their long-term effects, greatly facilitated the growth of private health insurance. The government restricted wage increases during World War II but permitted the expansion of fringe benefits, including private health insurance. During and after the war it established favorable tax regulations, which provided what was, in essence, a substantial subsidy for these benefits. And the U.S. Supreme Court in 1948 ruled that health benefits specifically were subject to collective bargaining, thus encouraging unions to take up their cause.

But at least two other factors have also influenced the development of health insurance. One is the increased efficacy of health care services. Beginning at the turn of the century, but especially noticeable in the 1930s and 1940s, medicine became ever more a scientific enterprise, offering enhanced hope for the ill or injured. Advances in health technologies gave

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power to intervene where there once was none. Even without subsidies, there was certain to be great demand for the new health care services available.

The other factor is the market interactions of firms, unions, and insurers. In countless thousands of encounters, those organizations bargain for private advantage and in the process help establish public policy. The basic forms of private health insurance have evolved in a continuing series of competitively determined contracts that have been only minimally supervised by government agencies and the courts, although the parties complain about government-imposed constraints. The potential for such public initiatives in health insurance has in fact narrowed as these private agreements expand.

Here I examine the origins and consequences of the private bargains that have guided the development of health insurance. Empire Blue Cross and Blue Shield pioneered many of the arrangements that now constitute the standard practices of private health insurance in the United States. Yet, because so much of health insurance is locally determined, Empire has unique characteristics that afford it some protection from national trends. The purpose of this article is to identify the unique as well as the general in the Empire experience.

#### *The agenda for insurance*

Most of Empire's subscribers are now enrolled in large groups through elaborately crafted corporate benefit plans. Initially, however, nearly all were enrolled individually or through voluntary groups formed at their places of employment, with Empire's sales force making the rounds periodically to collect the premium. A few paternalistic employers had established welfare programs that included medical benefits for their employees decades before the Blue Cross scheme was created.<sup>1</sup> Other employers welcomed the availability of Blue Cross insurance and helped in the collection of the premium or even contributed to it. But most stood indifferent to the health care needs of employees, lacking either the paternalistic urge or the materialistic incentive to become involved administratively in health insurance, let alone share in its financing. It was not until after the war that the switch to corporate plans with direct financial participation by employers took place on a large scale.

As Empire's near bankruptcy in 1939 demonstrated, financial viability for health insurance required both the enrollment of groups to avoid the problem of adverse selection and the establishment of realistic rates. In

<sup>1</sup> General Motors had a health and welfare plan beginning in 1926. Proctor & Gamble's started even earlier than that.



turn, the enrollment of groups at realistic rates required that employers help make insurance attractive by sharing its costs. The question then becomes, why did employers in large numbers begin to offer health benefits? Workers might have been attracted to health benefits due to the rapidly improving quality of health care services, but what attracted their employers to the same benefits? The threat of unionization, it would seem, is the answer.

Until the mid-1930s, employers were free to resist the unionization of their work forces with a wide range of harsh tactics, including threats, firings, and lockouts. The passage of the Wagner Act in 1935 gave federal protection to worker organizations by establishing procedures for union certification and collective bargaining that outlawed these tactics. The appeal of unionization grew rapidly among workers, although membership increases were constrained first by the Depression and then by the war. The end of the war was greeted by a wave of labor unrest, the greatest number of strikes in the American experience. Workers seemed eager to join unions, fearful perhaps that hard times were about to begin again. Over a third of the nonagriculture work force signed union pledges, and surveys indicated more were willing to do so if given the opportunity (Zieger 1986).

Employers feared the loss of managerial control that they believed would result with increased unionization and sought federal relief. The Taft-Hartley Act of 1947 was their great victory, but it was largely a symbolic one, in that the new law neither abrogated the rights of workers to organize nor removed the obligation of employers to bargain in good faith with workers. Instead, Taft-Hartley reinforced the rights of workers by imposing democratic controls over unions and by making the union recognition and negotiating process much more of an electoral contest between labor leaders and employers for the loyalties of workers than it had been previously (Lee 1966; Stone 1981; Zieger 1986).

In order to limit the growth of unions, businesses focused on increasing the satisfaction of their employees. Wage increases and improved working conditions were the obvious devices to keep employees happy, but they had their competitive limits. Fringe benefits were malleable components of employee compensation and had the special advantage of being linked directly to the beneficence of particular employers. Some fringe benefits were more attractive than others. Pensions appealed mostly to older workers; life insurance only to those with dependents. Health benefits had the broadest appeal, offering protection and some services for all. In survey after survey, they ranked as the most popular benefit (Nealey 1963; Greene 1964; Lester 1967; Staines and Quinn 1979; Sapolsky et al. 1981; Woodbury 1985; Solomon 1988). Costs seemed containable, even in the case of Blue Cross service benefits, because workers and their families were generally healthy and would probably stay so, due to the age limits on employment.

Unions, too, recognized the attractiveness of health benefits and pushed for the establishment of company-sponsored plans (Freeman 1981, 1986;

Rubner 1962). Fast fading was the notion that unions themselves could provide sufficient health and welfare benefits for workers (Baker and Dahl 1945; Muntz 1967). Instead, companies could be forced to finance these benefits for union members. Workers expected pay increases, but a health insurance benefit could be portrayed as the product of skillful efforts by negotiators who cared about the needs and anxieties of workers and their families. Every trip to the doctor was a reminder of the success negotiators had achieved. Nonunionized companies anticipated the demands for health insurance and unionized companies could not avoid them.

Within corporations and unions, bureaucracies developed that were devoted to exploring the extension of a favored fringe benefit. New job titles were created (benefit administrator, vice president—human relations, employee welfare specialist) and soon professional associations and disciplines developed to provide training and legitimacy for those hired to hold them. Every bargaining round, every union membership drive brought forward new proposals to deepen the benefit. The contest was for the short-term loyalty of employees who could identify personal and family health security with either the union or the company and who might be called upon to choose between them.

In some industries, particularly the prosperous, heavily unionized, capital-intensive ones, it was less a contest than a collaboration. The end of the war brought prosperity rather than depression. Labor peace and uninterrupted production could be bought by giving union leaders the chance to boost wages, to determine work rules, and, not infrequently, to express their social-reformist urges in the benefits package (Huntley 1987). In this collaboration, union leaders gained the admiration of the workers, while the managers gained the certainty that they could fulfill the ever-increasing orders for cars, refrigerators, washing machines, and the like.

Many of Empire's largest clients were either government agencies or heavily regulated firms such as the telephone company and other public utilities. They, too, preferred labor peace, providing rich benefit packages to avoid strife. The stability of the employment relationship and the ease with which cost increases could be periodically transferred to ratepayers added to the desire for benefit expansion. Like Empire itself, these were employers that could and did care for their employees.

Because the health benefit was dependent entirely upon the employment relationship, neither union leaders nor management had much incentive to seek a broader, societal solution to health insurance needs. A societal solution would remove the opportunity to claim credit for providing highly valued access to a rapidly improving bundle of services, allowing politicians to become the employees' benefactors instead. It was better to be in charge of the division of the wage bill, either competitively or collusively, than to hand part of it over to the politicians in the form of a tax, as would

surely happen with the adoption of a national health insurance scheme. If the union leaders spoke out for a government role in worker welfare, both they and the employers knew that no blood would be spilled to achieve that goal.

#### *Taking the risk out of insurance*

For-profit firms generally object vigorously to competition from non-profits. The tax-free status of nonprofits is the usual irritant.<sup>2</sup> In health insurance, this competitive advantage is compounded by the discounts that Blue Cross and Blue Shield plans have been granted by statute in some jurisdictions. And yet, until recently at least, the complaints of commercial insurers about the significant presence of competitively favored Blue Cross and Blue Shield plans in the health insurance business have been rather muted (Havighurst 1988).

The close ties Blue Cross and Blue Shield had with providers may be part of the explanation. Blue Cross plans began with the sponsorship of state or local hospital associations and Blue Shield plans had state or local medical society sponsorship. Until the 1960s, when formal relations were attenuated, the plans' governing boards were openly dominated by providers. The plans were creations of the providers and were recognized as such by their competitors in the insurance business. Commercial insurance companies needed the acceptance of hospitals and physicians to operate effectively and could be expected to be temperate in their rivalry with the providers' chosen instruments—Blue Cross and Blue Shield—because of that need. Boycotts by hospitals and physicians would be disastrous for the commercials. In this sense, the Blue's tax and discount advantage became an unpleasant, but necessary, part of their business environment.

More important perhaps, insurance companies recognized the special role the plans played in American health insurance. The plans' enrollment of individuals and small groups at community-based rates alleviated some of the political tensions inherent in a largely privately organized health insurance system. Although this enrollment policy is used to justify the tax exemption and discount, it serves the commercial insurers as well by limiting potentially more threatening government intervention in health insurance markets to protect the less insurable risks. Similarly, the existence of successful Blue Cross and Blue Shield plans with large market shares diminishes interest in a national health insurance scheme and complicates its administrative design. Better yet, it gives the commercial insurers important nonprofit allies in forming the coalition to oppose such schemes.

2. Legislated restrictions are placed on the activities of nonprofits in defense, keeping procurement contracts available for private enterprise.

As Lawrence Brown points out elsewhere in this issue, Empire Blue Cross willingly espoused the virtues of privatism in health insurance. This important political support was not lost on its commercial competitors, which in turn limited their criticism of the plans.

The close relations that Blue Cross and Blue Shield plans developed with unions have also been helpful to the commercial insurers, but in a different way. The commercials were slow to offer a health insurance line, as they were uncertain about its profitability. In demonstrating the viability of health insurance, Blue Cross, in particular, cultivated and won the allegiance of many large unions, although, as Markowitz and Rosner report elsewhere in this issue, it has been a relationship with significant tensions. By the time the commercials entered the business in the late 1940s, Blue Cross and Blue Shield plans were viewed as having a pro-union taint by at least some employers. This was especially true for Empire because many of its largest clients and even its own sales representatives were unionized. Most unions preferred Blue Cross and Blue Shield insurance and, because of that, many employers did not. Thus a segment of the market was ready to accept an alternative set of insurers when the commercials were ready to search for clients. The segment would later grow as the rate of union membership declined among workers, freeing many corporations from the obligation to use Blue Cross (Faber 1987).

Because the health insurance business was expanding rapidly during the 1940s and the early 1950s, Blue Cross and Blue Shield plans initially did not feel greatly challenged by the market entry of commercial insurers. The plans could keep their public service ideology intact, raise prices, and still experience expanding enrollments and revenues despite the existence of commercial competition. Their complacency, however, provided important market opportunities for their rivals that were fully exploited. The reluctance of the plans to allow employee copayments and deductibles, which were felt to inhibit access to care, permitted the commercials to offer major medical policies that proved to be extremely popular. The commitment of Empire and others to community-based rates gave the commercials the opportunity to offer group-experience rates to large employers seeking coverage for their usually healthier work forces. The concern the plans had for the income of providers, combined with the concern state regulators had for the premium expenses of individual and small-group subscribers, allowed the commercials great flexibility in the design and pricing of their policies, which to a considerable extent mitigated Blue Cross and Blue Shield's tax and discount advantages. Once offering the cheapest form of insurance, Blue Cross and Blue Shield shifted into providing relatively expensive and relatively uncompetitive products (Wallen and Williams 1982; Fitzpatrick 1965).

The structure of Blue Cross and Blue Shield also aided the commercials. Each plan had a defined geographic jurisdiction and operated as an independent entity. In some regions the plans were quite strong: Empire in the New York metropolitan area, for example. But in others they were quite weak, leaving open much business for the commercials. The sharing of logos notwithstanding, coordination among the plans was spotty. As corporations grew in scope in the postwar years, developing nationwide organizations to exploit nationwide markets, they found the plans' ability to offer compatible claims administration and other necessary services inadequate. Attempts to provide Blue Cross and Blue Shield with the appropriate national management systems were delayed and then limited by a persistent preference for autonomy among some plans, especially the smaller ones (*Benefit News Analyses* 1987). Empire was often the initiator of these attempts because it served several large clients headquartered in New York but with geographically dispersed work forces. In contrast, the commercial insurers began with or quickly acquired the ability to operate nationally. Although few of them approached the scale of the largest Blue Cross and Blue Shield plans, many of the commercials had the administrative capacity and hierarchy required to respond fully to the needs of expanding corporate clients.

During the 1950s commercial health insurers surpassed the number of people the Blues covered, but there was no effort to seize the entire health market. That would have in all likelihood been impossible, because some plans, especially Empire and other Blue Cross plans in the Northeast, were too firmly entrenched, their basic hospital policy being the standard around which additional health coverage was built (Adamache and Sloan 1983; Frech 1988). Moreover, the plans helped stabilize the market, politically and competitively. Having large, socially oriented nonprofits in the business kept government wary, worried lest some intervention it might initiate would disturb the political balance in health care, either by putting more people in need of government assistance for access to care or by annoying provider lobbies. It was useful also to have around plans with well-established ties to providers to help determine the rules for dealing with the powerful professions that existed in health care. One had only to follow the lead of Blue Cross and Blue Shield to know what would be considered acceptable behavior. And finally, it was beneficial to have as a major competitor organizations that were inherently cautious and never noted for their efficiency, especially if those organizations had built-in operating advantages, as did Blue Cross and Blue Shield, with their tax-free status and provider discounts (Havighurst 1988; Frech and Ginsburg 1978, 1988). The plans, one could say, made health insurance a less risky venture than it might have been for the commercials.

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*A good business goes bad*

Until the early 1970s, health insurance was a very good business. Large corporate clients were not much concerned about price. The quality of health care services was constantly improving. Benefit costs seemed in control. Physicians and hospital administrators were generally happy. The only task at hand was increasing access. And the insurers—Blue Cross and Blue Shield as well as the commercials—were expert at increasing access. Under their management, health benefits were continually being extended and deepened. The talk among the insurers was about what might be the next benefit frontier. Health care benefits for retirees were popular. Dental insurance was also coming along. Perhaps the next step would be vision care or even legal services.

In fact, the future for health insurance had been predetermined in 1965 with the enactment of Medicare and Medicaid, the programs for the elderly and the poor. Access for these groups had been a problem that was considered largely outside the domain of private insurance. Unrecognized was the braking effect that limitations on the affordability of health care for the elderly and the poor had applied on health care costs. Provider prices were constrained by the need to offer a reasonable amount of care for the elderly and the poor, who mostly lacked insurance or had very little of it. When government subsidies for this care were made available, both the demand for and the price of health care services increased rapidly. Health care inflation became the dominant public policy issue.

Government initiatives to control health care inflation have been chronically ineffective. First, attention was focused on supply controls, especially those for hospital beds and expensive medical technologies. Empire was particularly taken with this approach, as Fox points out elsewhere in this issue. Then there were efforts to influence medical practice. Later, the emphasis was on rate setting, with New York State being among the pace-setters. Although insurers were more than occasionally inconvenienced by these measures, none had serious impact on their core business activities. Inflation in health care itself was not unwelcome by insurers because their operating margins were a standard percentage of swelling revenues. As long as the inflation rate could be correctly anticipated in the premium increases and major clients or rate regulators did not object to the rising price of coverage, all was well in health insurance.

However, important difficulties began developing in the 1970s when the accumulation of lagging productivity, persistent general inflation, and increased international competition in domestic markets placed severe economic pressures on many American corporations, forcing them by the end of the decade to begin to initiate broad cost-reduction programs. Insurer enrollments stagnated because of the resulting layoffs in key industries and

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an increased reliance by employers on part-time workers, who are usually not provided with health insurance. No longer was there much interest in benefit enhancements. Competition from alternative coverage mechanisms grew, particularly from self-insurance and health maintenance organizations. Benefit redesign became the vogue, with more and more firms instituting premium sharing and higher deductibles for employees and their dependents.

Interestingly, despite the declining threat of unionization, employers have not sought to roll back their commitment to health benefits. Less than a fifth of the total nonagricultural work force is now unionized and most of the growth in employment occurs in the service and high-technology sectors of the economy, sectors in which unions have had difficulty penetrating (Faber 1987; Kochan 1985). Benefit redesign efforts, as common as they may be, have usually involved adjusting employee sharing to inflation, rather than attempting to shift insurance costs significantly onto employees (Equitable Insurance Company 1985; Jensen et al. 1987; *Business Week* 1988b). Like the federal government's treatment of Medicare benefits, there has been a visible reluctance on the part of employers to reduce the value of health insurance benefits, which remain extremely popular. The willingness of unions, even in their period of decline, to strike over health insurance serves as a deterrent against rollback attempts.

Instead, employers, and especially the large corporations among them, have focused their cost-reduction initiatives on the operating margins of insurers, an inviting target, which does not require much disruption in established patterns of employee relations (Etherege 1986; see also Sapolsky et al. 1981; McDonnell et al. 1986; Kosterlitz 1987). Nearly all of the major corporations, and many medium-size ones as well, self-insure, which not only saves them the applicable state insurance taxes and the obligation to adhere to state-mandated benefit requirements but also allows them to absorb a number of the functions previously performed by insurers (Kosterlitz 1985; Woodward and Foster 1986; Council on Health Care Financing 1984). Increasingly, the insurers are being relegated to the ministerial role of claims processors. The widespread use of third-party administrators, minimum premium arrangements, and benefit consultants further threatens insurer margins. Only a few Blue Cross plans, those in states like New York where a relatively large discount still protects the basic hospital coverage, remain partially isolated from the wave of competition sweeping the health insurance business. Empire has this advantage plus the stability provided by several large clients with entrenched unions.

But even with both its discount and its reservoir of major corporate and agency accounts, Empire has had to face the new reality. Large accounts, usually the most cost-effective to serve, are continuously solicited by insurance rivals seeking to expand their client base quickly. Some of these

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accounts, IBM and AT&T, for example, have insisted on having dedicated claims-processing facilities to guarantee quality service for themselves. The establishment of such facilities, in turn, strains Empire's managerial capacity to provide quality service to other accounts, leaving them vulnerable to the promises of rivals (Diblase 1988a). It is the classic insurance pool problem, this time affecting the administration of insurance.

The emphasis on cost control has other effects. Many corporations now offer their employees a range of insurance options, including health maintenance organizations and independent practice associations, in addition to traditional Blue Cross/Blue Shield coverage. The plans have had to develop competitive alternatives. More importantly, they have had to market again to individuals, requiring the relearning of skills long in abeyance.

The future looks even more arduous. Corporations are only just beginning to appreciate the balance sheet implications of new accounting regulations being promulgated by the Financial Accounting Standards Board, which require the full accrualment of the retirement health benefits promised employees (*Hospitals* 1986a; Glueck 1986; Nielsen 1987; Nichols 1988; Loomis 1988; *Business Week* 1988a; *Business Insurance* 1988). Once essentially ignored, these costs are to be booked annually and will anticipate inflation and the changing health care needs of current and future retirees. Estimates of the potential liabilities which must be considered by 1992 in calculating the financial condition of corporations because of these new accounting standards run beyond a billion dollars, a possible doubling of corporate debt. Corporations will also feel increasing pressure from federal policies directed toward shifting as much as possible of the costs for Medicare and other federal benefit programs toward the private sector (Sapolsky et al. 1981; Fuchs 1987). This is happening with rate regulation and the redefinition of eligibility for federal programs. The failure of government to pay the full cost provided to its beneficiaries means higher prices for other payers. As a result, no aspect of the health insurance business is likely to be safe again from client scrutiny.

### *The next fifty years*

Private health insurance spread rapidly in large part because of government subsidization, quality improvements in medical care, and the threat of unions. It remained a private undertaking largely because of provider fears of the controls that were thought likely to accompany government sponsorship. It was financially viable for so long largely because it was limited in scope, serving primarily the active, young, healthy segments of the population. Few of these factors have endured the half century. Increasingly we are learning that personal behavior determines good health, that unions have lost much of their appeal, that corporations want their



executives to be calculating, not kind, that providers now worry about privately imposed controls, and that accountants and the federal politicians are working hard to spread the costs of an aging society widely.

Consolidations among insurers are likely one result of these trends. Hundreds of firms with hundreds of presidents and thousands of senior vice presidents is too much overhead for the market to support. Already there have been mergers among Blue Cross and Blue Shield plans (*Hospitals* 1986b). Empire Blue Cross itself successively merged with United Medical Service (Blue Shield of New York) and with the Albany plan. More consolidation will be needed to build a truly national program that can offer a consistent set of services to national clients and that can compete effectively with the small number of surviving commercials.

The diversity in size, profitability, and lines of business among corporations is so great that unified positions on benefits or any other topic is impossible to obtain. Some firms will surely see the future of health insurance best left to their own management skills. Others, no doubt, will want not to be bothered or will think that they are not competent to act and will follow the lead of their insurers. But many are likely to believe that they are being unfairly burdened with the costs of both the more powerful purchasers of care (i.e., the government and the biggest firms) and the less responsible employers who purchase none at all. For them, a proposal to spread costs evenly and predictably in the form of a tax or standard assessment will have much appeal. Just as opting out of a community risk pool was once the answer, so too will the reconstruction of a community risk pool be the answer. The success of the unbundling of insurance services—the success of shifting costs from others, harms those who do not or cannot follow the same strategies. They will seek relief by advocating rebundling (*Hospitals* 1989).

There is another reason why firms will wish to return to the pool. Self-insurance not only forces employers to absorb the risks of ill health, it also requires them to take direct responsibility for life-and-death decisions. With self-insurance, the wrenching social decisions about whether or not to provide expensive life-saving therapies to identifiable employees and dependents can no longer be foisted off on distant and supposedly independent insurers. Instead they must be made by executives in the very firms in which the employees work. The weight of these tragic choices, with their potential for legal liability and public controversy, will burden executives who still think that the purpose of benefits is to build corporate loyalty, not destroy it (Chapman 1985; Dibble 1988b).

A restricted health insurance business, one with fewer insurers and fewer risk pools, would most likely be able to impose controls on providers, something that has yet to be achieved. Providers have fought hard to limit the role of government in health insurance, fearing the controls that might

result. Some providers may seek more government involvement in insurance, believing its inherent fragmentation, manipulability, and indecisiveness is preferable to the actions of the aroused agents of aroused corporations.

Ultimately, of course, the decision of how much discipline will be applied to health services costs will belong to the insured, who are caught between their desire for guaranteed access to quality health care and their distaste for the combination of foregone wages, higher prices, and higher taxes required to pay for that access. For the past fifty years the desire for access has dominated. It is unlikely that it will do so for the next fifty, especially if fighting death continues to absorb an increasing share of the resources needed to live life.

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# A Frank Statement to Cigarette Smokers

RECENT REPORTS on experiments with mice have given wide publicity to a theory that cigarette smoking is in some way linked with lung cancer in human beings.

Although conducted by doctors of professional standing, these experiments are not regarded as conclusive in the field of cancer research. However, we do not believe that any serious medical research, even though its results are inconclusive should be disregarded or lightly dismissed.

At the same time, we feel it is in the public interest to call attention to the fact that eminent doctor and research scientists have publicly questioned the claimed guidance of these experiments.

Distinguished authorities point out:

1. That medical research of recent years indicates many possible causes of lung cancer.

2. That there is no agreement among the authorities regarding what the cause is.

3. That there is no proof that cigarette smoking is one of the causes.

4. That statistics purporting to link cigarette smoking with the disease could easily apply with equal force to any one of many other aspects of modern life. Indeed the validity of the statistics themselves is questioned by numerous authorities.

We accept as natural in people's minds a basic responsibility, paramount to every other consideration in our business.

We believe the products we make are not injurious to health.

We always have and always will cooperate closely with those whose task it is to safeguard the public health.

For more than 300 years tobacco has given solace, relaxation, and enjoyment to mankind. At one time or another during those years critics have held it responsible for practically every disease of the human body. One by one these charges have been abandoned for lack of evidence.

Regardless of the record of the past, the fact that cigarette smoking today should even be suspected as a cause of a serious disease is a matter of deep concern to us.

Many people have asked us what we are doing to meet the public's concern aroused by the recent reports. Here is the answer:

1. We are pledging aid and assistance to the research effort into all phases of tobacco use and health. This joint financial aid will of course be in addition to what is already being contributed by individual companies.

2. For this purpose we are establishing a joint industry group consisting initially of the undersigned. This group will be known as TOBACCO INDUSTRY RESEARCH COMMITTEE.

3. In charge of the research activities of the Committee will be a scientist of unimpeachable integrity and national repute. In addition there will be an Advisory Board of scientists disinterested in the cigarette industry. A group of distinguished men from medicine, science, and education will be invited to serve on this Board. These scientists will advise the Committee on its research activities.

This statement is being issued because we believe the people are entitled to know where we stand on this matter and what we intend to do about it.

## TOBACCO INDUSTRY RESEARCH COMMITTEE

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Smoking and Health  
1964-1979  
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THE TOBACCO INSTITUTE  
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January 10, 1979

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This volume is published by The Tobacco Institute in the belief that public discussion about tobacco smoking is in the public interest and that the smoking controversy must be resolved by scientific research

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### Preface

The American people would be better served if high government health officials and private interest groups which encourage them abandoned the myth of "waging war" against diseases and their alleged causes.

The process of making public policy is better served when areas of scientific unknowns are illuminated by the light of reasoned deliberation rather than the heat of emotional rhetoric. Nature will not yield her secrets to media events, propaganda bartrages, self-righteous zeal or official fiat.

The enigmas of cancer and chronic diseases will yield only to the steady advance of scientific knowledge. And knowledge does not flourish in a lock-step society. It grows best under conditions of unfettered investigation and free, fair and full discussion.

Indeed, many scientists are becoming concerned that preoccupation with smoking may be both unfounded and dangerous -- unfounded because evidence on many critical points is conflicting, dangerous because it diverts attention from other suspected hazards. It should be noted that plans for the first report of the Surgeon General's Advisory Committee on Smoking and Health in 1966 called for "the study [to] be concerned not only with tobacco, but all other factors which may be involved such as air pollution, automobile exhausts, etc."

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One does not become an advocate of tobacco by supporting a broader, deeper, more objective consideration of the issue.

Over a hundred years ago, William Hazlitt, the English critic and essayist, put his finger on the nub of the problem. You may agree with him when he said:

The origin of all science is in the desire to know causes; and the origin of all false science and imposture is in the desire to accept false causes rather than none; or, which is the same thing, in the unwillingness to acknowledge our own ignorance.

It is time for all parties to this controversy to admit that there is much that is unknown. Doing so will encourage research to reduce the deficit in our knowledge and increase our understanding.

In that spirit, we offer for consideration this document, which -- while not intended to be exhaustive -- raises some of the questions in the continuing smoking and health controversy.

  
Horace R. Kornegay  
President, The Tobacco Institute

January 10, 1979

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Overview -- Smoking and Health 1979

Fifteen years have passed since the release of "Smoking and Health" -- the first and perhaps the most widely publicized of a series of such reports prepared by the Department of Health, Education and Welfare. Despite millions of dollars spent since that time both by the government and the tobacco industry on smoking and health-related research, many questions about the relationship between smoking and disease remain unanswered. Now, as in 1964, there are statistical relationships and several working hypotheses, but no definitive and final answers.

Despite claims to the contrary, no one -- in government or industry -- can explain the reported associations of smoking with lung cancer, heart disease, emphysema, low infant birth weights, and yes, even cancer of the pancreas.

No one knows why -- or how -- a cancerous growth begins, whether it is in the lung, pancreas, or bladder.

No one knows why the walls of human arteries become clogged with lipids or how clots that can lead to stroke get their start.

No one knows why pregnant women who smoke have lighter infants on the average than women who don't smoke, or why some women, whether or not they smoke, have smaller

infants.

Scientists have not proven that cigarette smoke or any of the thousands of its constituents as found in cigarette smoke cause human disease.

Nor have scientists demonstrated that the healthy nonsmoker is harmed by his neighbor's cigarette smoking.

But because some agencies in the U.S. government, members of the medical profession, and others who just don't like cigarette smoke act and react as if all the claims about smoking are scientific certainties, The Tobacco Institute sets forth here certain evidence which relates to such judgments.

A statement made by the U.S. Surgeon General in his foreword to the 1964 report is as relevant today as it was 15 years ago:

The interrelationships of smoking and health undoubtedly are complex. The subject does not lend itself to easy answers. Nevertheless, it has been increasingly apparent that answers must be found.

#### Public Smoking

Other people's smoke has never been shown to cause disease in nonsmokers.

Scientists, researchers, government officials and even some well-known anti-smoking spokespersons have stated

that smoking in public places does not harm the healthy non-smoker. Some persons may find the tobacco smoke of others annoying in some circumstances. Last year, a study conducted by Danish and British researchers found "transitory discomfort" but no evidence of lasting adverse health effects from cigarette smoke in otherwise healthy individuals.

Some persons who favor banning tobacco smoke in public places cite an article published last year claiming that exposure to cigarette smoke resulted in changes in the exercise performance ability of patients with severe angina pectoris. What is usually ignored is that this study is subject to severe criticism for faulty design as well as unsupported conclusions based on patients' self-described symptoms.

Some nonsmokers claim to be allergic to tobacco smoke. However, neither cigarette smoke nor any of the components as found in cigarette smoke has been demonstrated to be a human allergen. Nonsmokers who make such a claim sometimes cite a study which shows that smokers as well as nonsmokers react positively to skin tests with tobacco leaf extract, but this is an inappropriate substance to use in allergy testing for tobacco smoke.

Another claim frequently made by anti-smokers, that children are harmed by their parents' smoking, is mainly based on several studies published in the late 1960s and 1970s suggesting that cigarette smoke may be responsible for

adverse effects in children. However, questions have been raised about both the experimental methods and the reliability of the conclusions. Moreover, a number of recent studies have failed to demonstrate adverse effects in children of smoking parents.

Other people's smoke has never been shown to cause disease in nonsmokers.

#### Over-All Mortality

The use of results from flawed population studies to frighten people by attributing large numbers of deaths solely to smoking may be misleading and is most regrettable.

Assertions that nonsmokers as a group live longer than smokers are based on studies that were poorly designed and statistically flawed. For example, they involved samples not representative of the general U.S. population. Despite these problems, data from the reports are still used to support a variety of claims about smokers' mortality, including the charge that several hundred thousand Americans die each year because they smoke. With such use -- and misuse -- of data, it is probably not surprising that a caveat in the 1964 Surgeon General's report is often overlooked: "Statistical methods cannot establish a causal relationship..."

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### Women and Smoking

Inconsistent findings from studies of smoking women and their children make it impossible to draw convincing conclusions from the data.

### Pregnancy Outcomes

Although the abbreviated 1977-78 HEW report to Congress concludes that cigarette smoking is "probably causally associated" with increased perinatal mortality, it relies on data which indicate that any claims of a causal relationship have a highly questionable foundation. The data suggest that such factors as history of previous pregnancy loss and hospital pay status (public vs. private) have greater effects on pregnancy outcome than maternal smoking. The data provide support for the belief that adverse pregnancy outcomes -- indeed, the health and life or death of the child itself -- may be predetermined by who the mother is -- her constitution or innate characteristics -- rather than whether or not she smokes.

### Smoking and Early Menopause

Research which appears to indicate that smokers undergo menopause earlier than nonsmokers has been used to support a claim that smokers are depriving themselves of the "protection" from heart attacks believed to be provided by female sex hormones until change of life.

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However, this claim is not supported by heart disease mortality statistics which show no "jump" during the menopausal age span -- such as might be expected if large numbers of women were suddenly deprived of "protection" against this disease.

The almost single-minded concentration on smoking evident in much research in this area may result in a failure to consider other factors that may be involved. For example, Public Health Service research indicates that menopause begins earlier in black women, in white women from lower income levels and rural areas and in leaner women.

#### Oral Contraceptives

The scientific literature does not support the claim that oral contraceptive users who stop smoking decrease their disease rates significantly. This point was recently made in a Congressional hearing during which a decision by the Food and Drug Administration to require a printed warning -- which, in effect, implies such an assurance -- came under attack.

In discussions on this issue, concern has been expressed that the reported statistical relationship between oral contraceptive use, smoking and illness may cause scientists to overlook other factors that may explain this relationship.

# Women and Lung Cancer

A comparison of international lung cancer patterns raises various questions about the claim that the larger number of women smoking today accounts for their rising lung cancer rates. Such a comparison indicates that lung cancer patterns in women are different in various countries and are dissimilar from male patterns. Even when allowance is made for the later popularity of smoking among women, there is no consistent trend of increasing mortality rates.

Some scientists have questioned whether the recent increase in lung cancer mortality is more artificial than real. These queries have been made because physicians appear to be ordering more diagnostic tests for women they know to be smokers. Therefore, it may be possible that more lung cancer among women is being diagnosed because more reliance is being placed on diagnostic techniques not available in the past.

In addition, a role for occupational and/or other environmental exposures has been suggested by research conducted in heavily industrialized countries.

## Cancer in the Work Place

The almost exclusive focus on individual smoking habits in the study of disease may have delayed needed research into possible occupational and environmental causes.

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The announcement last September by KEW Secretary Califano that at least 20 percent of all cancers may be occupationally related brought angry denials from anti-smoking researchers and organizations whose own estimates differed significantly from the new estimate. The authors of the report referred to by the Secretary actually estimated that between 21 and 38 percent of all cancers were occupationally related. They attributed a sizable proportion of all occupational cancers to asbestos exposure and noted that "perhaps the most important lesson to be learned from the asbestos story is that a major health disaster can develop while its early manifestations are lost by being attributed to other factors."

#### Lung Cancer

The failure to consider critically 1) important diagnostic advances, 2) changes in the reported frequency of lung cancer cell types and 3) trends in cigarette consumption and lung cancer mortality data raises serious questions about any conclusions regarding smoking.

What some have called the "epidemic" in lung cancer mortality in this century has been linked by some to the increased popularity of smoking. However, it has been speculated that this reported increase may in fact have been created largely by improvements in diagnostic techniques -- in other words, more lung cancer cases have been reported because

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physicians were better equipped to find them. Even if at least a portion of the "epidemic" is real, trends in lung cancer death rates can not be satisfactorily explained by cigarette consumption patterns.

A British researcher has reported a similar phenomenon in the United Kingdom that he contends is more consistent with the constitutional hypothesis than the smoking-causation theory.

An apparent change in the reported frequencies of lung cancer cell types was observed in 1977. A researcher noted a shift in the histologic types of lung cancer found at a major cancer center -- from epidermoid, or squamous-cell, which has been more strongly associated with cigarette smoking, to adenocarcinoma, which is only weakly associated. Up to this point, at least, adenocarcinoma has been the predominant histologic type of lung cancer reported in women and in non-smokers. Because of this reported increase in the lung cancer cell type not generally associated with cigarette smoking, serious doubt is cast on the role of smoking in the development of this disease.

#### Other Cancers

The establishment of any relationship between smoking and cancers of the larynx, esophagus and bladder must involve considerable guesswork, because of the vastly different incidence patterns and trends of these diseases and multiple suspected causes.

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Incongruities in the trends of incidence rates for "other cancers," such as cancers of the oral cavity, bladder, esophagus, larynx and pancreas, are almost impossible to reconcile with the cigarette smoking causal hypothesis. These trends, as described last year, include such anomalies as incidence rates that rise, fall or remain stable depending on disease, sex and race.

Moreover, new evidence indicates that a number of these cancers may be associated with alcohol consumption and that the association of alcohol with cigarette smoking may not only confound the relationships but may hide other correlations. In addition, recent work has implicated occupational exposures and nutritional factors in the etiologies of some of these cancers.

#### Cardiovascular Disease

A fair appraisal of the evidence, examined in its entirety, indicates that the risk of coronary heart disease is strongly associated with genetic and lifestyle factors.

In 1977, the director of the governmental agency responsible for cardiovascular research told a Congressional committee that "we still don't know the etiology of arteriosclerosis and hypertension" and that his researchers are still testing the "hypothesis...that lowering cholesterol and cessation of smoking will delay or prevent the onset of

heart disease" (emphasis added). Meanwhile, statisticians were finding that death rates for heart disease continued the decline that began in the late 1960s -- in all age groups, in both sexes and in both whites and nonwhites.

There was new evidence in 1976, 1977 and 1978 that lifestyles, personality patterns and hormonal imbalances are implicated in coronary disease.

An important development in cardiovascular research was reported in 1977, by a group of researchers who reported that they were unable to duplicate their previous findings, which they said had suggested a causal role of carbon monoxide (CO) in the development of cardiovascular disease. In a presentation describing their findings, they said "no direct toxic effect of CO" could be demonstrated.

#### Chronic Obstructive Pulmonary Disease

The uncertainties and unknowns in the medical understanding of COPD permit no firm conclusions about smoking.

Chronic bronchitis and emphysema are highly complex and poorly understood diseases. Despite serious gaps in the medical knowledge in this area, claims abound that these diseases are caused by smoking. The validity of such claims is challenged by a recent National Heart, Lung and Blood Institute statement that "the exact etiology of emphysema and other chronic lung diseases is unknown..."

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### Public Smoking

This could have been the shortest chapter in this collection considering the first item to be presented below. But it won't be, because the myths which have grown up around the whole subject of public smoking (sometimes called "passive smoking") must be discussed.

Despite those myths, the recent testimony of the man who has directed the government's smoking and health research program for more than 10 years may well summarize the situation.

Dr. Gio B. Gori of the National Cancer Institute was asked by a Congressional committee last October, "Is

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Other people's smoke has never been shown to cause disease in nonsmokers.

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there evidence to suggest that there may be an increase in risk of heart and lung disease to a nonsmoker by being in the presence of smokers?" Replied Gori:

Well, this is a difficult question to answer, Mr. Chairman, because the answer that I have to give as a scientist may not please always the anti-smoking forces. But the fact remains that we really do not have conclusive scientific evidence about the adverse health effects of passive smoking on the bystander (and) in the usual conditions under which smoking is practiced, the evidence does not indicate that the casual bystander is seriously harmed by smoking (1).

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Very recent research -- two papers published in the second half of 1978 -- confirms this appraisal. In one, which appeared in the American Medical Association's Archives of Environmental Health, a Canadian team found that physiological responses to smoke exposure in normal adults could be described only as "minimal" and said "arguments concerning effects rest on symptomatology" -- in other words, on how the subjects said they felt, a highly unreliable standard (2).

In the second, Danish and British scientists wrote in International Archives of Occupational and Environmental Health that they found "transitory discomfort" but that constituents of neither the gas phase nor the particulate phase of ambient cigarette smoke have "a lasting adverse health effect in otherwise healthy individuals" (3). Like the Canadians, the researchers said their test situations were realistic and typical of rooms in which smokers gather.

Carcinogenic effects have not been demonstrated in humans. Nor do any studies to date establish that breathing others' tobacco smoke either causes lung disease or worsens the status of patients with existing disease (4). And it has not been established that atmospheric tobacco smoke has a causal role in coronary heart disease in nonsmokers (5). What evidence there is that ambient cigarette smoke may affect CHD sufferers has been called deficient (see below).

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Nitrosamines

A recent technique of some researchers has been to measure levels of specific cigarette smoke components in various public places and then announce that the non-smokers, by merely being present, would inhale the equivalent of so many cigarettes in so many hours.

One such experiment in New York was described in 1977 at a joint conference of the American Chemical Society and the Chemical Institute of Canada (6).

One of the researchers told how they had isolated tiny amounts of nitrosamines in cigarette smoke from laboratory smoking machines. Then they designed an apparatus to measure the compounds also in the smoke produced between the machine's puffs (the sidestream smoke, in effect).

Next they fitted the apparatus, consisting of two glass jars full of "trapping solution", some tubing and a battery-operated vacuum pump, into an attache case. And they headed, attache case in hand, first for a smoky New York commuter train bar car and then for a small metropolitan bar "frequented primarily by cigarette-smoking clientele."

The amounts of nitrosamines they trapped in their glass bottles, they told their fellow chemists, indicated that customers in the bar could have inhaled in an hour the

same amount of nitrosamines as a smoker of nine to 16 nonfilter cigarettes.

The researchers then discussed the "shortcomings" of their experiment. First of all, they were dealing with "volatiles" which change swiftly in the atmosphere (if not in a glass bottle with "trapping" solution). Then there were the two assumptions on which their estimates were based: one, that the mode of inhalation in breathing and smoking are comparable and, two, that "man's smoking conditions are synonymous with those of the test machine." Then they admitted that neither assumption was true. And they have yet to publish their results in a scientific journal.

The measurement of nitrosamines in tobacco smoke has been controversial. Even the 1971 HEW report to Congress commented that nitrosamines reportedly found in smoke may be "artifacts dependent on the method of smoke collection" (7).

A University of California chemist has estimated that at the same amounts nitrosamines were reported in side-stream smoke, smoking as many as 100 cigarettes in a small room would produce only 3 nanograms (3 one-billionths of a gram) of the compound per liter of air (8). He said that at this concentration a carcinogenic effect could not be demonstrated in animals.

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Carbon Monoxide

There was considerable furor last July at the publication of an experiment by an avowedly anti-cigarette researcher in California -- coincidentally just before that state voted on a proposed statewide restrictive public smoking measure.

Dr. Wilbert S. Arenow wrote that remaining two hours at a time in smoke-laden rooms adversely affected 10 patients with angina pectoris (9).

The research has been roundly criticized since then for faulty study design as well as unsupported conclusions based on self-described symptoms of severely ill patients who had no doubt been advised, as are most angina sufferers, to avoid stressful situations (5, 10-16).

Calling the study "flawed," a Los Angeles chest specialist wrote in The Los Angeles Times:

Both investigators and subjects were aware of their exposure to the smoke and, obviously, that such exposure might be harmful. Moreover, the major measurement of the study -- the occurrence of chest pain -- was subjective. In other words, the test subjects' reports of chest pains while exercising could well have been influenced by their belief that they had been harmed by exposure to cigarette smoke. Considering this, as well as the curiously low variation in the subjects' carboxyhemoglobin levels (with and without exposure), I find the study questionable and sorely in need of confirmation (17).

(carboxyhemoglobin (COHb), referred to by the Los Angeles physician, is the key to the charges made against cigarettes in both the heart disease area and in public smoking. COHb is created in the blood when carbon monoxide, from whatever the source, combines with red blood pigment.

Claims about the alleged health effects of CO as found in cigarette smoke (see also Cardiovascular Disease) appear to be based on research which shows that an average smoker has higher levels of COHb than an average nonsmoker.

Experiments in test rooms under varying atmospheric conditions, with varying numbers of cigarettes and other tobacco products burned or smoked by volunteers, have shown increases of CO in the room air. An important point to remember is that when indoor areas are adequately ventilated, CO levels should be reduced to a point that no adverse effects will occur in persons and groups expected to be present in such environments (18).

The few studies that also measured the COHb levels in smokers and nonsmokers in these test rooms found that even under severe conditions there was not an appreciable increase in COHb (19).

In what might be considered the most extreme experiment, incidentally, four persons got into a small European car, windows up tight, inside a closed garage (20). Two

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smokers smoked 10 cigarettes in an hour, and the COHb levels rose sharply in all subjects.

Studies have measured CO in the atmosphere under more realistic conditions. Combined results of these studies indicate that CO from smoke measured in normal daily situations rarely exceeds 10 parts per million (21-26).

Cigarette smoke is, of course, not the only source of CO in the atmosphere. The most predominant modern source is exhaust from the internal-combustion engine (27). CO is also a natural body constituent created by normal metabolism. Recently a Canadian researcher reported that high levels of CO are generated when pots and pans are placed over otherwise clean burning gas flames during the cooking of a meal (28).

#### Nicotine

The question of nicotine absorption by nonsmokers has been investigated by some scientists. These studies, in both experimental and real-life situations, have shown that nonsmokers are exposed to insignificant amounts of tobacco smoke. In fact, when a German researcher found that the nonsmoker takes up only a small fraction of nicotine, he concluded that "when speculating on possible health hazards by passive smoking, one may ignore nicotine" (29).

In order to discover the possible physiological

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effects of exposure to nicotine, other researchers recorded heart rate, blood pressure, electrocardiogram readings and skin temperature in nonsmokers in experimental rooms with heavy concentrations of tobacco smoke. None of these parameters was measurably affected (30).

#### Work Performance

Any claims that tobacco smoke, or the CO in tobacco smoke, adversely affects work performance are not warranted by the evidence. The HEW 1973 report to Congress said that what evidence there is in that area is conflicting and any "psychomotor" effect of CO exposure "remains unclear" (19).

The Federal Aviation Administration addressed the point recently in its denial of a petition that smoking be banned in the cockpit (31). In its denial, the FAA cited conclusions of Air Force scientists on effects of abnormally high levels of CO on performance. The agency's news release about the petition denial said:

FAA said the information submitted by the petitioners to support their contention that smoking impairs performance "is too inconclusive to warrant the issuance of the requested rule"...FAA conceded that smoking can reduce the blood's oxygen-carrying capability but said there is no evidence at present that this has any deleterious effect on performance. In fact, the agency noted that there is evidence that the body adapts to the effects of small amounts of carbon monoxide by increasing its red blood cell

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mass aid, thus, its oxygen-carrying capability. It called the petitioners' failure to address this point a major deficiency in their argument (32).

A National Institutes of Health panel of scientists also considered the question of cockpit smoking early last year at the request of the Surgeon General, perhaps as a result of the FAA turndown and the FAA's view that the original petition was deficient.

After a thorough review of the scientific literature as well as information obtained from the Department of Defense and the FAA, the NIE experts came to the same conclusion as the FAA.

Smoking by the pilot -- even if he or she is a regular smoker -- they said, "is judged to have negligible effects on physiological and psychomotor functions and therefore on flight safety, especially when compared to overall performance skills demanded of pilots" (33).

Smoking in airplanes brings up another aspect. Is it the cigarette smoke itself or the sight of cigarette smoke that bothers the typical person who objects to public smoking?

Recently, a trial plan in which smokers sat across the aisle from nonsmokers was tried by Western Airlines. Western engineers said the trial produced a torrent of complaints and blamed psychological effects rather than any

ventilation problem (34). The former aviation editor of United Press International, commenting on that Western trial run, said, "It seems that all a nonsmoker needed was to see someone smoking, and that was enough to make him think he could smell the smoke. I'm afraid this is just one more instance where emotionalism gets in the way of established scientific facts" (35).

#### Allergy?

Some nonsmokers, of course, say they are not just bothered by smoke, they are also allergic to it. Indeed, former Surgeon General Luther Terry stated in 1977 that "there are a few people who are actually allergic to tobacco smoke and can become ill from exposure" (36).

Despite Terry's belief, neither cigarette smoke, nor any of its components as found in smoke, has been demonstrated to be a human allergen.

Researchers at the Mayo Clinic reported to the American Academy of Allergy in 1976 that they had tried, and failed, to find evidence of tobacco smoke allergy in their tests with patients (37). Last year, after analysing the pertinent literature and discussing his own research work at Tulane Medical Center, Dr. John Salvaggio told a Congressional committee that "there is no proof that tobacco smoke is aller-

genic in man" (38).

Claims about tobacco allergy stem primarily from research that has been done with tobacco leaf. Extracts of leaf produce allergic reaction in some people -- both smokers and nonsmokers -- usually those who are otherwise allergic (39-42). Whether cigarette smoke or any of its constituents is allergenic cannot be resolved, however, in tests with tobacco leaf.

Dr. Carl Becker and colleagues from Cornell Medical College have reported isolating a brown pigmented molecule (termed "tobacco glycoprotein") from both cured leaf and from smoke. They claim it is an allergen (43-45). These experimental pathologists have speculated that "tobacco glycoprotein" may be responsible for some of the diseases which have been statistically associated with smoking.

Becker's reports were of special interest to Russell Stadman, who for years directed work with tobacco leaf and tobacco ~~smoke~~ condensate at the Department of Agriculture Eastern Regional Research Center in Philadelphia.

Indeed, Stadman, who is retired now and serving as a biochemical consultant to Temple University, tried to duplicate the published isolation procedures of Becker. Stadman said he found that one step in Becker's method introduced as yet unidentified extraneous contaminants into the brown pigmented

material isolated, then tested by Becker for allergenic properties. And, Stedman wrote last year to the House Agriculture Tobacco Subcommittee (46) that Becker's separation technique had already been documented, as early as 1971, as introducing "substantial chemical materials" into what was tested (47).

In his statement, Stedman contended that for a number of reasons he was "unconvinced" that Becker had demonstrated the presence of a human allergen in either tobacco smoke or smoke condensate. For example, Stedman wrote that Becker had not specified whether the "glycoprotein" with which he had produced allergic reactions in volunteers was from tobacco leaf or tobacco smoke condensate. Although Becker assumed that the materials were identical, Stedman noted that he had concluded from his own research that they were quite different chemically. Stedman also stated that he was not sure whether the material Becker had extracted even was a glycoprotein.

#### Parent/Child Effects

A favorite slogan recently of those urging legislation to restrict public smoking has been that cigarette smoke can cause respiratory disease in a child. Or if they want to be more dramatic, anti-public-smokers say something catchy, such as the declaration of a New York physician that "The



largest area of child abuse is parental smoking" (48).

That smokers' children have more respiratory ailments because their parents smoke is strictly conjectural. Much epidemiological research has been done on the question here and abroad, but no investigator has been able to demonstrate that cigarette smoke in the home is responsible for a child's picking up a germ or cough. Some have reported that cigarette smoke may be responsible for adverse effects in youngsters (49-53). But their work has been questioned because of faulty study design or suspect conclusions (19, 34).

Epidemiologists whose own research in smoking and nonsmoking ~~research~~ in three American cities was published in 1977 (55) wrote on the subject again in 1978 in British Medical Journal (56).

First they summarized their earlier conclusions that neither lung function nor respiratory symptoms of a nonsmoking husband or wife were affected by a smoking spouse and that parental smoking appeared to have "no effect on children's respiratory symptoms" or "lung function."

Then they suggested that "the only definite evidence" that parental smoking may affect children's respiratory systems was a British study (57) indicating that the infants of smoking parents have more respiratory illness during the first year of life than infants of nonsmoking parents.

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But they pointed out that in the same population this was not true in children aged one to five years. And they concluded that "at present there is no firm evidence that these illnesses in children under one year have a serious and lasting effect as no excess of respiratory illness or diminished lung function has been found in the older children of smoking parents."

At least four other studies have failed to demonstrate adverse effects on children of smoking parents (58-61).

Other environmental and socioeconomic factors that have been associated with respiratory symptoms and diseases include a "cooking effect" identified in a four-year study of 5,700 youngsters in England and Scotland (62). Boys and girls from homes in which gas was used for cooking had more coughs, "colds going into the chest" and bronchitis than children whose homes had electric stoves. The researchers concluded that products of fuel combustion might be the cause of the increased respiratory illness.

#### Conclusion

Public smoking has not been shown to cause disease in nonsmokers. As a past president of the American Association for Thoracic Surgery recently stated:

An assertion that tobacco smoke is a health hazard

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to the normal nonsmoker is untenable. The weight of evidence as it exists in the world literature does not support a claim of adverse health effects for those exposed to "passive smoking" (63).

Speculation that reaction to public smoking may have psychological or emotional origins is worth considering. A medical columnist noted recently that "symptoms may come from anger rather than from the smoke itself" (64). He added that:

. . . what is irritating or annoying has not yet in any scientific study been shown to be dangerous to the nonsmoker.

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Smoking and Over-All Mortality

"[I]t is not unreasonable to speculate that the kind of men who become regular cigarette smokers are, to a moderate degree, less inherently able to survive to a ripe old age than non-smokers."

"Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service" 1964 (1)

This sentiment, buried in the report released January 11, 1964, is not an unreasonable speculation today. But the mortality statistics that report developed on reported smoker/nonsmoker differences are still being used -- and abused.

For instance, the HZW report to Congress of 1977-78 made the statement, based on only three population studies,

The use of results from flawed population studies to frighten people by attributing large numbers of deaths merely to smoking may be misleading and is most regrettable.

that "over-all mortality rates for cigarette smokers are about 70 percent higher than those of nonsmokers," and discussion of smoker/nonsmoker mortality differences occupied almost half the report (2).

HZW Secretary Califano took the mortality rate

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implications one step further, saying in January 1978 (and often through the year) that more than 300,000 persons died in 1977 from cancer and heart disease for which "smoking was a major factor" (3).

For a more complete exposition of the so-called "excess deaths" concept, see Appendix. Meantime, here's how most of these sorts of figures were derived. The calculations were based on the population surveys (4-12) on which the first Surgeon General's report (1) relied so heavily.

Government statisticians took data from the seven surveys, conducted in various areas, in various groups of people, over varying periods, and considered for the most part only whether or not the subjects smoked. The statisticians then reanalysed the data and computed what they called a mortality ratio (smokers vs. nonsmokers) of 1.68.

"A mortality ratio higher than 1 implies (emphasis added) that the group of smokers has a higher over-all death rate than the non-smokers," they said in the 1964 report. Expressed another way, the mortality difference is 68 percent, and the 1973-78 report authors rounded 68 off to "about 70 percent". That's the excess percent of deaths observed over what might have been expected had smokers died at the same rate as nonsmokers.

But, as the authors of the 1964 report pointed out,

the mortality difference in the seven surveys varied from 44 percent higher in British doctors (5,6) to 83 percent higher for an American Cancer Society survey conducted by volunteers (11,12). And the 1964 authors also draw attention to the possibility that bias arising from what were high nonresponse rates "might account for a mortality ratio of 1.3". This raises questions about the other biases that might affect the accuracy of the 1.64 figure.

Still with us? Let's get on, then, with some of the "weaknesses" of the surveys from which the 1.7 mortality ratio was computed. Some have been enumerated by the government people themselves (1,2), some pointed out by others.

But first let us consider another not unreasonable speculation by the authors of the first report:

[T]he low death rates for non-smokers [lower than U.S. general death rates] suggest the possibility that the studies recruited unusually healthy groups of non-smokers (1).

#### Design Weaknesses

American Cancer Society surveys (10-13). "Men in 25 states" was the largest of the seven surveys. The authors of the 1964 report said that this survey and the earlier "men in nine states" survey "suffer from the difficulties that the populations studied are hard to define, that the smokers and non-

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smokers were recruited by a large number of volunteer workers, and that completeness in the reporting of deaths was hard to achieve, since this depends on reports from the volunteers" (1).

What they didn't say was that the larger Cancer Society survey wound up with a male lung cancer death rate twice as high as that of U.S. males nationwide and women's rate three times as high as that of U.S. females. Death rates observed for coronary heart disease and emphysema were 10 to 60 percent higher than male and female national rates (14), all of which leads to the not unreasonable speculation that the volunteers enrolled many who were already ill with these diseases.

If persons with alleged smoking-related ills were overrepresented in the ACS population, so were residents of coastal and urban areas, including the industrialized Northeast; the mountain states and the Northwest tier were excluded entirely. There was an overabundance of better-educated, native-born, Protestant whites and a dearth of blacks (14). And a map of the ACS survey states includes almost all the so-called lung cancer hot spots identified in the National Cancer Institute's new "cancer atlas" (13) (see chapter on Cancer in the Work Place).

One finding from the later ACS survey is surprising and disturbing if one believes that tobacco causes disease:

Men who smoked cigars only -- as well as those who smoked pipes only -- had lower mortality ratios than those who smoked no tobacco at all (1). This finding can not easily be dismissed as a quirk of nature because the British doctors study (3,6) also reported this "incongruity".

The U.S. veterans survey (7,16). Just as nonrepresentative of the total U.S. population as the ACS's predominantly middle and upper socioeconomic subjects, the veterans were mostly white-collar, skilled workers who served in World War I. Their smoking habits, unfortunately, were recorded only when they first returned their questionnaires (in two waves, in 1934 and 1937). Relying on later data from the same population (17), the HHS 1987-78 report to Congress noted as a weakness "the lack of information about more recent changes in smoking habits" (2).

One of the strange findings: Veterans who had smoked cigarettes and other products for 25 to 33 years had lower mortality ratios than those smoking only 15 to 24 years (1).

British doctors survey (3,6,18). An obvious drawback in this survey is that its subjects were highly selected, British professional men who shouldn't be considered comparable to any general U.S. population. More importantly, the survey actually showed that quitting smoking did not reduce mortality -- the exact opposite finding from that claimed by many who have cited

it as proof that cigarettes shorten lives.

Then a risk factor has been associated in a population with increased incidence of a disease (or death), removal of that risk factor should result in a drop in that disease (or death) in that population. A 50 percent reduction in cigarette smoking between 1951 and 1965 did not change the over-all death rates in those years in the British doctors (19)! And there went the remove-the-risk-factor-and-reduce-the-risk theory--at least as far as the British doctors were concerned.

Another problem with the physicians survey was referred to briefly before, that of "nonresponse bias". Only two-thirds of the doctors who were sent questionnaires replied (17). In other words, one in every three British doctors contacted either was not interested enough to return his questionnaire (or had some reason not to) or else gave answers that were rejected as incomplete.

There is no way of knowing if those who do not participate in a survey of this sort are similar to those who do. The authors of the British doctors survey wrote later that a sample of their nonrespondents indicated they differed in several respects from a sample of respondents, and the authors felt "sure that the doctors who chose to answer were not representative of the total" (18). That such nonresponse can seriously bias this sort of investigation and lead to a "spate of doubts" has been expressed eloquently by one of the authors



of the same survey of British doctors (20).

It is not surprising that the authors of the 1964 report properly warned that "none of the populations was designed, in particular, to be representative of the U.S. male population". Or that they continued: "Any answer to the question 'to what general population of men can the results be applied?' must involve an element of unverifiable judgment... The seven studies differ considerably in size. They vary also in the extent to which they are free from methodologic weakness" (1).

Almost a decade later a Canadian researcher commented on the methodological problems in the surveys before an American Statistical Association meeting. He included a complaint that "few if any of the many studies reporting a link between smoking and disease have ever been published in a principal statistical journal where the methods of sampling and data analysis would have received adequate review" (14). In view of the many critical defects in these surveys, he suggested that researchers should reevaluate their past reliance on them.

#### Association vs. Cause

Long forgotten in any claims of high mortality ratios and/or excess deaths in smokers is the careful caveat written

into the first Surgeon General's report by its authors.

They said:

Statistical methods cannot establish proof of a causal relationship in an association. The causal significance of an association is a matter of judgment that goes beyond any statement of statistical probability (1).

Many who have opposed smoking appear to infer causality from association in all causes of death (including accidents and suicides) which have reported smoker/nonsmoker mortality ratios larger than that magic number 1. That national abstention from smoking would automatically prolong the lives of those who had smoked is a most unreasonable speculation.

And that's exactly what a well-respected government health statistician told an American Cancer Society meeting recently:

[Most of the large-scale studies on smoking and health have tended to investigate the role of smoking independent of other behavioral variables, such as alcohol consumption and other lifestyle factors, occupational and environmental hazards and certain psychological factors. These variables are known to be related to health status... Thus it may well be that the elimination of smoking without any changes in the other factors will have only a partial impact on health status (emphasis added) (21).

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Conclusion: Then and Now

The past reliance on population surveys to indict tobacco in disease causation is open to severe criticism because of the many inherent weaknesses in these studies. Even outspoken opponents of smoking have recognized this;

"As mentioned previously, the smokers and non-smokers in these studies may differ with respect to other variables that might influence the death rate."

"Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service" 1964 (1)

"Blanket assumptions that every disease associated with smoking is caused by smoking create a credibility gap..."

Thomas G. Vogt, M.D., M.P.H. (22)

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### Women and Smoking

After two decades of denouncing smoking and claiming "proof" that cigarettes cause various diseases and disorders in men, anti-smoking organizations have in recent years launched special campaigns to persuade women that they, too, are adversely affected by cigarettes. Their alarms usually begin with the charge that the woman who smokes in pregnancy may harm her infant. There are claims, too, of reported increases in lung cancer mortality in women as a result of their smoking. Because of this new emphasis on the ladies, we devote a

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Inconsistent findings from studies of smoking women and their children make it impossible to draw convincing conclusions from the data.

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chapter here to what HEW has called "the smoking-related problems unique to women" (1) -- and a look at some of the unexplainable lung cancer mortality trends for women.

### Pregnancy Outcomes

A sizable section of the HEW 1977-78 report to Congress on smoking and health (1) was devoted to smoking women and their pregnancies. It concluded with the strong language that cigarette smoking was "probably causally associated"

with higher late fetal and infant mortality. However, the actual data mainly relied upon by the KZW authors in reaching this conclusion suggest that any relationship between maternal smoking and pregnancy outcome is far from clear and any claims of causality have highly questionable foundation.

The study relied upon by KZW in that last report to Congress was a retrospective analysis at Johns Hopkins of 31,490 births recorded in 10 teaching hospitals in 1960 and 1961 (2). Data were collected on infant birth weight, infant mortality, prematurity and placental complications. The statistical analyses of the data on infant mortality indicated that a history of a previous pregnancy loss, the mother's hospital status (private or public patient -- a socioeconomic indicator) and a variable related to age and number of previous pregnancies had "greater effects" on perinatal mortality than maternal smoking level.

In their analyses for prematurity and placental complications, the researchers found that previous pregnancy loss and hospital pay status were more strongly related to unfavorable outcomes than maternal smoking level.

The reported importance of previous pregnancy history and hospital pay status strongly indicates that a mother's pregnancy experience may well be determined by who the mother is -- her constitution or innate characteristics -- rather than whether or not she smokes. The complexity of all of

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these findings and the areas to which the data point for further research seem strikingly inconsistent with the unwavering and exclusive emphasis on the mother's smoking habits.

#### Low-Birth-Weight Babies

Like most other pregnancy studies, the work at Johns Hopkins found that smoking women on average have smaller infants than nonsmokers -- more of what are called low-birth-weight (LBW) babies. LBW infants weigh 2,500 grams -- about 5.5 pounds -- or less. Why and how this happens has not been explained. But the possibility that a common factor predisposes women both to smoke and to have a higher proportion of LBW infants was recently described by the director of a child health study who suggested that "the smoker and not the smoking" may determine whether a woman has an LBW infant (3). Dr. Bea van den Berg took over direction of the large PHS-funded California study from the late Dr. Jacob Yerushalmy, who first proposed, as early as 1964, the hypothesis that a mother's smoking may serve as a marker for -- but not as a causal factor in -- the birth of LBW infants (4).

Yerushalmy contended that ineffective randomization and the problem of self-selection in studies comparing smoking and nonsmoking mothers made it difficult to draw any inferences from the observation that smokers seem to have more LBW infants (5). In perhaps his best-known study, he identi-



fied a group of women who began to smoke after their first children were born (6). Comparing the birth weights of children born before and after the women began smoking, he discovered that both groups of children were lighter than the children of nonsmoking mothers. He said this indicated some women will have smaller infants whether or not they smoke.

Two researchers published data in 1977 that appear to support Yerushalmy's hypothesis. A National Institutes of Health epidemiologist found that differences in mean birth weights of infants born to women who smoked during one pregnancy but not another were "more consistent with the self-selection hypothesis" than the causal hypothesis (7). An Australian who worked with records of 1,200 maternity patients concluded his findings were "compatible" with the theory that maternal smoking does not cause LBW but is "an index" of some other factor or factors (8).

#### Perinatal Mortality

As with the claim that maternal smoking during pregnancy is causally related to increased perinatal mortality is not supported by the scientific evidence. Yerushalmy, for example, found that the mortality rate of LBW infants was considerably lower for those with smoking mothers than for those with nonsmoking mothers (9). He contended that his data argued against the proposition that cigarette smoking acts as an external factor that interferes with fetal development.

In 1978, the editor of the British journal, Public Health, wrote that evidence that small infants of smoking mothers do not share the high mortality of infants of the same weight born to nonsmoking mothers "has been disregarded." He suggested, "We may tell women that if they smoke their baby may be small. But [we] should not claim risk to life" (10).

#### Spontaneous Abortion

In the 1973 HEW report to Congress, the last specifically to discuss spontaneous abortion, the authors said several studies had reported finding a significantly higher, dose-related incidence among cigarette smokers. But they conceded that "the lack of control of significant variables other than cigarette smoking does not permit a firm conclusion to be drawn about the nature of the relationship" (11).

No firm conclusion about the "nature" of the relationship can be drawn now, either.

A recent study by New York researchers did assert that smoking is a risk factor for spontaneous abortion (12). However, the researchers found no statistically significant relationship between the amount smoked and the rates of spontaneous abortion. Moreover, their emphasis on certain data in the study was criticized by another researcher, who said this focus magnified "the apparent effect of smoking" in the higher-

risk age groups -- the younger and older mothers-to-be (13). He suggested that if some of the women were smoking "because they were uptight about a floundering pregnancy" that fact "might distort the picture just enough to make it appear that smoking is an etiologic agent of spontaneous abortion, when in fact it may merely be a more prevalent behavior characteristic in a troubled pregnancy." Failure to consider this and a number of other factors caused him to conclude, he said, that "we are still at a loss for the cause of spontaneous abortion."

That smoking is a risk factor for spontaneous abortion is not supported by other studies, which have failed to show any significant link with smoking. These include two published since 1976 (14, 15). Another, conducted in Sweden, examined a variable that is not always considered. It found that an overall increased risk of spontaneous abortion among smoking women was almost completely due to the fact that the pregnancy was unwanted (16).

A British Medical Journal editorial of less than a year ago puts the reported relationship in perspective more succinctly than anything we could say:

What remains to be established is whether the association between cigarette smoking and spontaneous abortion is causal...Only by identifying a mechanism by which cigarette smoking could give rise to spontaneous abortion could we be confident of a causal relation (17).

Congenital Malformation

A physician appearing before an American Cancer Society "forum" on smoking stirred the audience with his charge that smoking is "likely to cause birth defects" (18). However, his opinion was not shared by another physician, appearing at a similar ACS "forum" two weeks later. The second doctor said:

...I don't think anyone has identified absolute evidence that this [congenital malformation] is a result of the chronic or even acute smoking of the mother (19).

These conflicting opinions, especially within one anti-smoking organization, reflect the inconclusive scientific findings in this area.

Several large-scale population studies have failed to establish a relationship between smoking and congenital malformation (9, 15, 20, 21). Another, examining congenital malformation diagnosed during the first five years of life, found that fewer such conditions occurred in children born to women who smoked during pregnancy than to women who never smoked or to women who stopped at some time before becoming pregnant (22).

Even the New York researchers who reported an association between smoking and spontaneous abortion concluded, after study of the scientific literature on smoking and infant malforma-

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tion, "it is unlikely that smoking acts to cause fetal anomalies" (12).

That emotionalism can override objective analysis in any area of pregnancy and childbirth is illustrated by the headlines which accompanied the release of a study by a Pittsburgh pathologist who claimed maternal smoking was related to congenital malformation (23). Although one headline read "Baby Brain Defect Linked to Smoking" (24), examination of the research paper revealed that the pathologist had described this finding only as an "apparent association" that "requires further analysis." This sort of proviso, of course, never appears in headlines.

#### Child Development

Another favorite claim of anti-smokers is that smoking during pregnancy retards the subsequent growth and learning ability of the child. In fact, NZW Secretary Califano in early 1971 spoke of the "developmentally disabled" children of smoking mothers (25).

The basis for these allegations? Apparently it is data from an on-going perinatal and child follow-up study in Britain which indicated that the children of smoking mothers lagged behind the children of nonsmoking mothers in physical and mental development (26-28). The authors did note that the

effect of smoking during pregnancy is "relatively small" in comparison with the effects of some other factors, such as social class and the number of older and younger children in the household (28).

In the British study, the children of smoking mothers were on the average 1 centimeter -- or only about three-tenths of an inch -- shorter than children of nonsmoking mothers (26). There was also a four-month difference in reading ability between the two groups of children (27). But analysis of physical growth showed that a number of other factors were associated with size at age 7. For example, the child of a blue-collar family was on the average 1.3 centimeters shorter than the child of wealthier parents, while the fourth-born child was usually 2.3 centimeters shorter than the first-born.

In a later report from the same British study, researchers examined the children at age 11 and measured only minor differences in either height or mental development of children born to smoking and nonsmoking mothers (28). They also reported that these differences were less than the effects of some of the other factors considered. For instance, the difference between a child from a household with no older children and one from a household with three or more was, on the average, 16 months for general ability, 29 months for reading, 14 months for mathematics, and 4 centimeters for height.

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The results of the British study were inconsistent with those of Johns Hopkins researchers who followed children born of smoking and nonsmoking mothers in 1962 and 1963. They reported: "At four and seven years there was no significant difference in either physical measurements or intellectual functioning" (29).

Despite such studies, there are still those who look only at whether the mother smoked during pregnancy to explain possible differences in children's growth and learning skills. This shortcoming was apparent in the 1977-78 HEW report to Congress on smoking and health (1). The authors discussed a California study in which children of smoking mothers were found to be shorter at age five than children of nonsmoking mothers (30). But the HEW writers didn't indicate that the study showed a difference of only 0.9 centimeters, and that the researchers had attributed nearly 90 percent of the variations to "parental stature alone." Only 2 percent of the .9 centimeter difference could possibly be due to association with smoking -- about 7 one-thousandths of an inch -- according to the California investigators.

#### Oral Contraceptives

The scientific literature does not support the claim that oral contraceptive users who stop smoking significantly decrease their disease rates. In other words, there is no

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scientific basis for any assurance that oral contraceptive users are not likely to develop certain diseases if they stop smoking.

The new warning insert now required by the Federal Food and Drug Administration in oral contraceptive packages in effect implies such assurance. And the FDA came under attack at a Congressional hearing last fall for its decision requiring the new inserts. Several prominent statisticians who had examined the studies relied upon by the agency in its decision testified (31-34). One noted that:

The wording as stated implies that there is a causal effect of cigarette smoking on the incidence of cardiovascular disease. No statistical study can establish causality. At best it can establish a high probability of possible interrelationships (33).

The studies which the statisticians criticized claimed to have shown that smokers who use oral contraceptives have an increased risk of cardiovascular disease (35-38). Their converse, the statisticians said, was based on statistical weaknesses, inadequate sample size and other methodological problems in the studies. Some of these weaknesses had been noted by the authors of the original reports:

These estimates of risk...still need to be interpreted with caution, as a number of assumptions have necessarily had to be made in their calculation and the margin of error is likely to be fairly wide (39).

It is essential to point out that the mortality estimates used in this paper are based on small

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numbers and may be subject to large sampling errors. These estimates are also subject to upward and downward biases, which may not cancel each other out... (the net effect of these various factors cannot be estimated without additional research, preferably in different settings (37)).

These estimates [death-rates] are based on small numbers and are necessarily approximate. Without more data it is not possible to examine the inter-relationships of age, smoking, and duration of oral contraceptive use... (38).

Several witnesses expressed concern that a statistical relationship between oral contraceptive use, smoking and illness may influence scientists to overlook other factors that may explain the observed relationship.

Two other researchers urged in the British journal *Lancet* that scientists not let "preconceived ideas affect objectivity" in examination of other possible hypotheses. Left unanswered in research so far, they wrote, is the confounding question of self-selection (39). And they asked:

Is it possible that the women who smoke and use oral contraceptives (particularly the older group) are simply reflective of a more flamboyant lifestyle which may well include more stress, more alcohol, more medication (including "downers" and "uppers"), or marijuana use?... There seems to be nothing in the data which would answer once and for all the question -- is it the smoker or the smoking which creates risk difference and is it the oral contraceptive user or oral-contraceptive use which is at the bottom of it all?

They concluded that "somehow epidemiological and laboratory studies must be designed to distinguish among the

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possible aetiologies." What they called "the mix of factors", which include genetics, they wrote, "may be more complex than we think."

#### Smoking and Early Menopause

In a widely publicized study which appeared in 1977, Boston researchers reported they had found that smokers undergo menopause earlier than nonsmokers (40). According to some voluntary health associations and anti-smokers, this appeared to present a health hazard, because onset of change of life supposedly deprives a woman of the "protection" she is believed to have from female sex hormones (estrogens) against cardiovascular disease (CVD) in her reproductive years. However, this claim can be disputed for several reasons.

First, the CVD vital statistics don't support such a theory. If women actually lost some form of hormonal protection with the onset of menopause, reported CVD death rates presumably would jump during the menopausal age span -- rather than continue the expected steady increase. An editorial in Lancet examined this question a few months after publication of the Boston research. And it pointed out:

Mortality statistics do not seem to support the suggestion that the menopause has any effect on the risk of CHD (coronary heart disease), since the death-rate from the disease increases steadily with advancing age (41).

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Two researchers who studied trends in CHD mortality data for women in England and Wales concluded that women do not lose protection from CHD after the menopause (42).

Secondly, evidence inconsistent with this claim has been presented in a study of premenopausal women with advanced hardening of the arteries (43). The researchers found that the women did not have estrogen deficiencies, as might be expected in the hormonal protection theory. Instead, they found that a family history of coronary disease, hypertension or diabetes was "the most consistent single factor" found among the women.

Finally, a study of women who underwent surgery for removal of their ovaries -- a procedure resulting in estrogen deprivation -- reported that they had no more coronary artery disease than an age-matched control group (44). The authors wrote that "our data support previous reports which question the protective effect of estrogen on development of atherosclerotic coronary artery disease."

Among the facts that are not mentioned by those claiming a sticking-early menopause link is that other variables have been associated with the onset of menopause. For instance, a Public Health Service study of 1,200 women found that the median menopausal age tended to be lower in black women and in white women from lower income brackets and rural areas (45).

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The FHS study also pointed to a fact that has been discussed in other studies: that lean women undergo menopause slightly earlier, and the thinner their measured skinfolds, the earlier the change in their menses. The leanness factor also was reported by other researchers in a 1976 study (46).

And what everyone has forgotten is that women who smoke have been found to be leaner than women who do not (47-49).

So one is left to wonder, if leaner women experience earlier menopause, is it because they are leaner, or because they smoke, or because of the kind of persons they are?

#### Women and Lung Cancer

Some persons who disapprove of cigarette smoking claim that the larger number of women smoking accounts for their rising lung cancer death rates. This claim does not stand up well under critical scrutiny.

A major weakness in the claim can be seen in a comparison of international lung cancer patterns. Lung cancer death rates for U.S. women have reportedly been rising faster year to year than those in men since the early 1960s (50).

The U. S. situation is drastically different from

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that in Europe. In a World Health Organization report, a professor of actuarial science reported in 1977 that while men's lung cancer death rates had risen relatively steeply in five European countries, none of the women's rates had risen significantly. In fact, the over-all lung cancer mortality in French women had dropped (31). In the United Kingdom declining rates of increase have been observed in younger women; simultaneously, a downhill trend in male rates has been reported in the older age groups (32).

Thus, lung cancer occurrence patterns in women differ in various countries and they are also quite dissimilar from those of males. Even when allowance is made for the later popularity of smoking among women, there is still no consistent trend of increasing lung cancer mortality rates.

These data are not at all compatible with the contention that the cause of lung cancer in both sexes is the same agent -- cigarette smoking.

Some scientists believe that the recent rise in lung cancer in women is more artificial than real, because physicians order diagnostic tests more frequently now for women patients they know to be smokers. For example, a doctor at the Yale Medical School reported that over a 12-year period hospital records indicated a dramatic increase in the use of sputum smear tests for women lung cancer patients. He commented: "This increase in the search rate for women may

possibly play a role in various recent reports of rising rates of lung cancer in women" (53). Therefore, it is highly likely that more lung cancer among women is being diagnosed because of the more frequent application of diagnostic techniques than in the earlier years -- when many cases might not have been so diagnosed.

Often overlooked in the hurried attempts to put the full blame for women's lung cancer on smoking is the fact that the proportion of cases of this disease with the cell type that has been most frequently associated with smoking has changed very little in the past 25 years (54,55). This raises the question of why researchers haven't observed an immense increase in squamous-cell lung cancers if the causal agent is cigarette smoking. Simple explanations for this so-called "epidemic" of lung cancer in women based solely on smoking habit, are clearly inadequate.

Recent studies have suggested that industrial or occupational exposures may be important in lung cancer causation in women. A study in Los Angeles County reported an increased risk of lung cancer in women who worked as beauticians, assemblers and waitresses (56). Increased lung cancer mortality rates for women were reported in counties in the U.S. in which certain heavy industries are located. In some, the rates for women were more than a third higher than the general U.S. rate (57).

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The need for further occupational, geographic and socioeconomic studies of women and disease should be recognized from these and similar research findings. A single-minded focus on smoking hampers the search for lung cancer causation.

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### Cancer in the Work Place

After HEW Secretary Califano announced before an AFL-CIO audience in September 1978 that at least 20 percent of all cancer in the U.S. may be work-related (1), a news weekly for health professionals began its report on the speech like this:

HEW has leaped into the midst of the continuing disagreement over just how much cancer is caused by workers' exposure to carcinogens on the job (2).

Previous estimates had ranged only from 1 to 3 percent, and there were immediate complaints after the Secretary's talk from business interests, the American Cancer Society and some scientists (2-12).

The reason for the ACS complaint was not immediately discernible. Its national president said only that the figure was "totally out of line, much too high" (9). The

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The almost exclusive focus on individual smoking habits in the study of disease may have delayed needed research into possible occupational and environmental causes.

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concern of business and industrial leaders, fighting ever-increasing government regulation in the work place, was

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a bit more easily understood.

The new study on which Secretary Califano based his 20 percent estimate was written by 10 Public Health Service scientists, including the director of the National Cancer Institute (13). They were quite explicit in their criticisms of the earlier -- and lower -- estimates of work-related causes by half a dozen epidemiologists here and abroad, all of whom, interestingly enough, are longtime foes of cigarettes and some of whom have attributed a specific percent of cancer deaths to cigarette smoking.

The NCI scientists wrote that "it is a reductionist error and not in keeping with current theories of cancer causation to attempt to assign each cancer to an exclusive single cause... Patterns and trends in total cancer incidence (and mortality) in the U.S. are consistent with the hypothesis that occupationally-related cancers comprise a substantial and increasing fraction of total cancer incidence."

"The fact is that cancer is a disease of interactions," one of the authors said subsequently. "By ascribing a cancer to a single cause, we precluded looking at other causes" (14). Another of the 10, who described himself as "no fan of cigarette smoking," said that "you can't lay [all] the blame [on cigarettes]. The causes of cancer are much more complex. It is caused by the interaction of many factors" (15).

The new study originated during informal discussions by scientists who were skeptical about low occupational cancer estimates (14). The 10 scientists completed it for submission to the Occupational Safety and Health Administration (OSHA) during hearings on sweeping new rules proposed by OSHA to regulate cancer-causing substances in the work place (17).

Secretary Califano said that the 10 authors of the study, who included physicians and biostatisticians, actually estimated that between 21 and 38 percent of all cancer cases could be attributed to work exposure. But, he said, "we chose the more conservative figure because this is the first study of this kind we've done and because we'll be doing a lot more studies to refine it" (18).

The PHS scientists attributed a sizable portion of occupational cancers to asbestos exposure (an estimated 67,000 deaths yearly), the rest to other substances associated in past studies with increased cancer incidence or death rates (see Table 1). They listed a dozen occupations in which cancer deaths are abnormally high, but for which no specific causes have been identified (see Table 2).

"Perhaps the most important lesson to be learned from the asbestos story," they wrote, "is that a major public health disaster can develop while its early manifestations are lost by being attributed to other factors" (13).

Table 1

## Chemicals Associated with Cancer Induction in Man

<u>Chemical Substances</u>	<u>Affected Tissues and Organs</u>	<u>Estimated No. Workers Potentially Exposed</u>	<u>Estimated No. Excess Cancers Per Year</u>
Asbestos	Lung, pleura & peritoneum, esophagus, stomach, colon/rectum	8,000,000 to 11,000,000	67,000
Arsenic	Respiratory tract	1,500,000	2,100 - 7,300
Benzene	Blood-forming organs	2,000,000	240 - 1,400
Chromium	Respiratory tract	1,500,000	2,400 - 46,000
Coal tar pitch, volatiles & coke oven emissions	Lung, larynx, skin, scrotum	60,000	160 - 800
Iron oxides	Lung, larynx	1,600,000	1,300 - 5,000
Nickel oxides	Respiratory tract	1,370,000	3,800 - 5,000
Petroleum distillates	Lung, larynx	3,000,000	2,400 - 12,000

Source: Bridbord et al 1978 (13)

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"The Asbestos Story"

Claims are being made that smoking workers who are exposed to asbestos have significantly increased risks of developing lung cancer. However, those who make such claims often overlook the extremely complex relationship between occupational exposures and the increased risk of certain diseases that have been discussed by various scientists and researchers, including those who prepared the new PES report. Such claims, moreover, do not take into account the fact that in most studies of asbestos workers smoking habits have not been determined. In some others, the data have been incomplete.

Claims that asbestos workers who smoke do have an increased risk of developing lung cancer were made in a 1968 report (19). That study, by Drs. Irving Selikoff and Jacob Churg of Mount Sinai School of Medicine and E. Guyler Hammond of the American Cancer Society, was the first to take smoking into account.

In that study, Selikoff and his colleagues calculated that asbestos workers who smoked had 92 times the risk of dying of lung cancer than workers who had neither smoked nor been exposed to asbestos. They made this calculation on the basis of records from an insulation workers union, which reportedly showed that only asbestos workers who smoked had

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Table 2

Occupational Groups in Which Excess Cancer Incidence  
Has Been Reported Without Identification of  
A Specific Etiologic Agent

<u>Occupational Groups</u>	<u>Cancer Site</u>	<u>Percent Excess Reported</u>
Coal miners	Stomach	40
Chemists	Pancreas, lymphoid tissue	64 79
Foundry workers	Lung	50-150
Textile workers	Mouth and pharynx	77
Printing pressmen (newspaper)	Mouth and pharynx	125
Metal miners	Lung	200
Coke by-product workers	Large intestine, pancreas	181 312
Cadmium production workers	Lung, prostate	135 248
Rubber industry Processing	Stomach, blood-forming organs,	80 140
Tire building	Bladder, brain,	88 90
Tire curing	Lung	61
Furniture workers	Nasal cavity and sinuses	300-400
Shoe workers	Nasal cavity and sinuses, blood-forming organs	700 100
Leather workers	Bladder	150

Sources: Bridgord et al 1978 (13)

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died of lung cancer.

Based on the reported association of smoking with lung cancer mortality and the association of asbestos exposure with the same disease, they concluded that the combination of smoking and asbestos exposure creates a risk that is larger than the expected combination of the two separate risks.

This whole-is-greater-than-the-sum-of-the-parts concept is referred to in epidemiology as "synergism". In considering studies which have suggested such an interaction between asbestos and smoking, a 1978 PHS publication on asbestos mentioned the Selikoff study. The report said that the findings do suggest such an effect. But, the report added, "The relation of the statistical interaction to the pathogenesis of lung cancer is uncertain" (20).

The risk of lung cancer in nonsmoking asbestos workers was discussed recently. Speaking at a conference on pollutants and high risk groups, OSHA's director of carcinogen identification and classification said last June that recent studies indicate a five- to 15-fold excess risk of lung cancer in asbestos workers who do not smoke (21).

Any conclusion that it is the smoking which is responsible for the reported increased risk of lung cancer in the smoking asbestos worker is not justified on the basis of available evidence.

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### Mapping New Clues

Just two months after his announcement that 20 percent of U.S. cancer cases probably originate in the work place (1), Secretary Califano began a \$40 million program to find out more about the chemical hazards that Americans may be exposed to at work, at home, wherever they are. He said the "phenomenal technological advances" in this country have brought with them serious health hazards, "as in the case of asbestos," and directed four of his HEW agencies to work quickly "and with all available resources to identify and control the many toxic substances to which our citizens are exposed."

He said relatively few of the more than 7 million chemicals now known to man have been tested for carcinogenicity and that as many as 60,000 are now believed to be or have been in commercial use, with 600 to 700 new ones entering commerce yearly. He ordered stepped-up animal testing at HEW and put in charge of the whole program one of the authors of his cancer-in-the-work-place report, Dr. David F. Rall, director of the National Institute of Environmental Health Sciences (22).

The expanded testing program may provide new clues about those substances which apparently cause cancer in animals, and therefore may cause cancer in humans. This

information may assist epidemiologists in analyzing unusual geographic patterns they have found in cancer incidence.

These patterns have been documented in several recent NCI studies including:

- A compilation for every county in the contiguous 48 states of numbers of cancer deaths and age-adjusted death rates, by site, sex and race for the years 1950-69 (23).
- The "Atlas of Cancer Mortality for U.S. Counties 1950-69," which gives the same information graphically, with color-coded maps showing geographic variations in cancer incidence at the county level. The authors noted that "the maps for lung cancer indicate that excessive mortality is not limited to highly populated urban areas where cigarette smoking and air pollution are most prominent" (emphasis added). The maps enable epidemiologists in both public and private sectors to do correlation studies with data on demographic and environmental variables collected on a county level (24).
- A similar atlas with data on U.S. nonwhites (25).
- Another set of maps indicating counties in which 18 different manufacturing industries have facilities and associated demographic data concerning employment and other population information. These maps, the authors wrote, reveal industrial county clusters that may provide a "useful point of departure"

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for more in-depth local studies to evaluate occupational factors in cancer (26).

"The cancer atlases have been the basis for many studies already. NCI researchers, for instance, recently compared cancer mortality rates for counties with and without petroleum refineries and discovered an excess of cancers of the lung, nasal cavity and sinuses in those counties with refineries. They drew no firm conclusions about cause, but they surmised that the high rates of lung cancer in women might be due to a "pollution hazard spreading beyond the workplace". They did suggest industry-wide epidemiological studies to clarify the cancer risks among various groups of petroleum workers and to "evaluate the possible effects of petrochemical emissions released into neighboring communities" (27).

"There's something horrible out there, but we don't know what it is," one of the researchers told Business Week (28). The magazine reported in the same story that one large oil company had just added an epidemiologist to its staff and, with other companies, was participating in a tumor-registry program in which all cancer morbidity and mortality records of employees are funneled through the American Petroleum Institute to Sloan-Kettering Institute for Cancer Research in New York. There, researchers look for patterns that might point to a cause.

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Cancer epidemiology, incidentally, has been until recently the specialty of a relatively small number of statisticians and health practitioners, whose work was largely sponsored by the government. The circle is tight and there is great demand on those who are already doing most of the work. Joseph F. Fraumeni, Jr., for instance, who co-authored the petrochemical survey (27), was also one of the prime movers behind the 1976 cancer atlas (24) and a member of the team of scientists who wrote Secretary Califano's cancer-in-the-work-place report (13).

Fraumeni told Business Week that NCI had doubled its epidemiology staff in two years and, like other scientists quoted in the article, bemoaned the lack of qualified environmental researchers to fill newly created positions in government and industry (19).

#### Conclusion

Several years ago, Dr. Wilhelm Hueper -- one of the deans of research on occupational carcinogenesis -- warned that:

Human exposure to many of these agents [potential human carcinogens] is not only widespread, but also often intense, and most of them are used without observing any real precautions. This lack of precautions may continue as long as the exposed public can be persuaded that the main lung cancer hazards are limited to cigarette smoking (30).

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Dr. Hueper, whose occupational research on cancer began in the 1920s when he noted an alarming increase in lung cancer since the turn of the century around industrialized cities in Central Europe, received a special Public Health Service award last fall mere months before his death at 84, for his "vision and courage" (31).

The new PHS report may well focus needed attention -- as recognized so long ago by Dr. Hueper -- on the role of occupational exposures in the development of disease.

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### Lung Cancer

Carcinoma of the lung was one of the first diseases to be associated, in modern times, with tobacco smoke (1). Some government officials and scientists opposed to smoking explain the reported dramatic increase in lung cancer death rates observed in this century by pointing to the concurrent rising popularity of smoking. They have also tried to attribute the apparent recent decline in the rate of increase of male lung cancer mortality to a decrease in smoking and the introduction of the new low "tar" cigarettes. These may be

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The failure to consider critically 1) important diagnostic advances, 2) changes in the reported frequencies of lung cancer cell types and 3) trends in cigarette consumption and lung cancer mortality data raises serious questions about any conclusions regarding smoking.

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easy and elementary explanations of lung cancer causation, but they seriously oversimplify the situation and ignore critical questions which need to be examined.

### Diagnostic Error

A critical examination of the reported increase in lung cancer mortality must take into account changes in diagnostic techniques. The increase, claimed by some to be

"epidemic," may in fact have been created largely by radical improvements in diagnostic techniques that have become available to physicians. In other words, more lung cancer has been found because physicians were better equipped to find it.

Implications of this new ability to find lung cancer were discussed more than 20 years ago by a National Cancer Institute biostatistician. In 1955, Alexander M. Gilliam figured out that if the error in diagnosis of lung cancer were only 10 percent in 1914, decreasing to 2 percent in 1950 after introduction of most of the new diagnostic tools and techniques we know today, male lung cancer death rates would have only doubled in the 35-year period instead of the 26-fold increase indicated by national records (2).

Further reason to question the validity of the "epidemic" can be found in what has been termed the tendency toward overdiagnosis of lung cancer. It has been suggested that primary lung cancer has become a "popular" disease to diagnose in smokers -- in other words, physicians are finding more lung cancer (whether or not it actually exists) because they are looking more for it. One New York chest specialist put it this way:

The prodigious increase in lung cancer during the past three decades is not due to the exposure of the population to an alleged carcinogen but is the natural consequence of the widespread use of techniques not previously available. The intense interest in lung cancer has also produced a tendency

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toward overdiagnosis of the disease on the basis of radiologic, biopsy, and cytologic findings which are often not substantiated by autopsy (3).

#### Trends in Death Rates and Smoking Patterns

Even if one assumes for the sake of argument that at least a portion of the "epidemic" is real, the trends in lung cancer death rates cannot be explained satisfactorily by smoking patterns. As long as 20 years ago, statisticians forecast a decline in lung cancer mortality. They based their predictions primarily on analyses of lung cancer death rate trends of the first half of the century. They also acknowledged such factors as the dramatic increase in the segment of the population most susceptible to cancer (the aged) and the overdiagnosis of the disease in smokers with accompanying underdiagnosis in nonsmokers (4-6).

In 1961, the NCI statistician, Dr. Gilliam, made a forecast about U.S. lung cancer death rates, basing it on his analysis of mortality trends.

A decline since 1948 in the rate of increase in lung cancer mortality, he said, indicated that "the disease will reach a peak among the white male population in the foreseeable future and then start to decline" (7).

Indeed, within six months a researcher reported

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that lung cancer death rates in the Seattle area had ceased to rise in persons under 60 and predicted that they would plateau in 10 to 15 years (8).

In 1965, Great Britain's Registrar General made a similar forecast for his country (9), as did Canada's director of cancer statistics in 1966 (10).

Subsequently, NCI statisticians attempted to equate the leveling lung cancer death rates in men with changes in their smoking rates (11). And others jumped on the bandwagon, also attributing the change in mortality rates to smoking trends (12, 13).

Another epidemiologist was more skeptical, however, when he wrote in 1974 that it did not seem likely that smoking patterns could explain lung cancer in the U. S., England and Wales. Ian Higgins, who is well-known for his anti-tobacco views, said that the flattening/decline of age-specific mortality rates in British men "appears to have preceded the reduction in cigarette smoking" (14). He even suggested that Britain may be "witnessing a saturation phenomenon. . . that those most susceptible to the disease have now developed it, with the result that the peak of the epidemic is now past".

Further support for rejecting the smoking-causation interpretation was provided in 1975 by a British thoracic surgeon, Dr. J. R. Belcher, who noted the changes in age

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and incidence patterns of lung cancer in his country. He speculated on what caused the changes:

Are they due to the discovery of the relationship of cigarette smoking to bronchial carcinoma and the subsequent national campaign against the habit? This seems a likely suggestion until it is realized that the fall in the percentage increase in the rate and eventually of the rate itself in the younger age groups was happening as long ago as 1950. It seems more likely that the fall in the percentage rate of increase which dates back for at least fifty years has eventually led to an actual fall in the rate itself. This process has progressed steadily over many years, and represents the natural history of carcinoma of the bronchus (15).

Even more recently, Professor Phillip Burch of the University of Leeds summarized much of his own work published since 1972 demonstrating the lack of correlation between smoking trends and changes in British lung cancer death rates. In January 1977 Burch wrote in the British Medical Journal:

[T]he detailed changes in recorded death rates from lung cancer in England and Wales from 1901 to 1970 were strikingly synchronous in the two sexes. Thus the major cause of the increases had a simultaneous impact on both sexes and could not have been cigarette smoking because the increase in consumption of cigarettes by women lagged some 30 years behind that of men (16).

Burch said that post-mortem studies of the frequency of lung cancer indicated that the most important factor in the increase of recorded lung cancer has been clinical diagnostic error.

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### Self-Selection -- The Constitutional Hypothesis

In 1976, the ACS interpreted data from its 25-state study as indicating that men who smoked cigarettes with lower "tar" and nicotine yields had lower lung cancer mortality (17). Commenting on these data in 1977, however, one British researcher wasn't so sure. Dr. M.A.R. Russell, who has long had strong anti-smoking views, said that drawing such a conclusion at the present time would be premature, "as the smokers who changed their cigarettes were self-selected" (18).

Self-selection is an important part of the "constitutional hypothesis" first injected into the smoking and health controversy more than 20 years ago by Sir Ronald Fisher, recognized then -- as now -- as the father of modern-day statistics (19). The Surgeon General's report in 1964 described it as an "alternative hypothesis that both the smoking of cigarettes and cancer of the lung have a common cause which determines both that an individual shall become a smoker and also that he shall be predisposed to lung cancer" (1).

The constitutional hypothesis has been discussed frequently in recent years. Professor Burch in England, for instance, has maintained that the data on smoking and mortality in his country are more consistent with the constitutional theory than the smoking-causation theory. And he hasn't hesitated to say so.

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Since 1972 Professor Burch has been published extensively on his theory and has provoked considerable discussion and controversy in the medical literature. But none of this dialogue within the scientific community about the cause of lung cancer has appeared in any of the HEW reports to Congress on smoking.

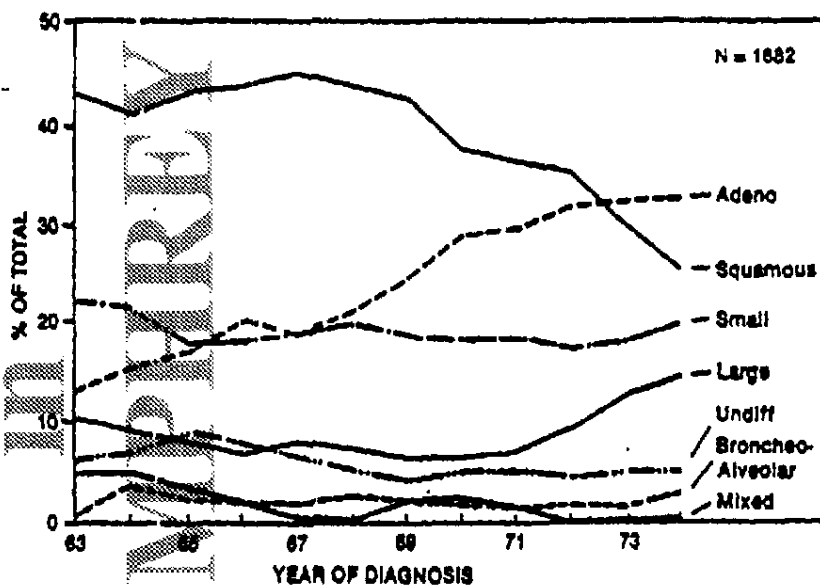
#### Different Types of Lung Cancer

There are several distinct types of lung cancer -- distinguished by the appearances of the cells in the tumor under microscopic examination -- is well-known. Some types have stronger statistical associations with cigarette smoking than other types.

Epidemiological studies have indicated, for instance, that cigarette smoking is more strongly associated with epidermoid, or squamous-cell, cancer of the lung and is not associated, or only weakly so, with another major type, adenocarcinoma.

There has been little discussion of lung cancer by cell type in the yearly HEW reports to Congress on smoking and health, but it has been generally accepted that adenocarcinoma is more common in women and in nonsmokers. In 1977, a New York researcher, Dr. Ronald C. Vincent, reported that pathologists at Roswell Park Memorial Institute were finding a rapid decrease in squamous-cell carcinoma, and

Figure 1  
The Changing Histopathology  
of Lung Cancer  
1963-1975



Source: Vincent et al. 1977 (20).

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a corresponding increase in adenocarcinoma (see Figure 1). He added that if their data proved to be representative of national trends, "adenocarcinoma will soon become the most prevalent type of lung cancer in the United States" (20).

Speculating about the factors responsible for this development, Dr. Vincent mentioned the increasing incidence of lung cancer in women, modifications in the way pathologists identify lung cancer cell types and environmental and occupational agents and alterations that have occurred over the last few years in cigarettes. He conceded, however, that his team had considered such factors as "length of smoking history, form of tobacco used, quantity of tobacco used, age habit started, degree of inhalation and the use of filters", and that they had been "unable to equate the histology of lung cancer with any of these factors".

The reasons for this development, if it ultimately proves to be representative of the national experience, remain unknown.

One wonders if this reported increase in adenocarcinoma may have a similar basis as the over-all lung cancer "epidemic" discussed above -- that is, observer variations. Much of the over-all "epidemic" may be due to changes in clinicians' techniques; much of the adenocarcinoma increase may be due to modifications in the way pathologists classify lung cancer cell types.

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As a case in point, three pathologists in Connecticut reappraised the histopathology of 449 lung cancer cases from original tissue specimens and showed the rate of agreement with past readings was only 63 percent (21). They reviewed cases that had been interpreted between 1953 and 1959. On their reappraisal, the percentage of cases classified as adenocarcinoma increased markedly, while the percentage of squamous-cell carcinoma decreased significantly.

These investigators suggested that a reappraisal of associations between specific histological types of lung cancer and smoking was warranted.

#### New Hypothesis -- Diet

Other developments in lung cancer in recent years include a new emphasis on what might be called the "diet hypothesis". An epidemiologist in Japan who is known to be strongly anti-tobacco reported last September that eating green and yellow vegetables daily lowered the risk of lung cancer in smokers and nonsmokers alike (22). "This came as a surprise to me, because I thought that only cigarette smoking could influence the risk of lung cancer," Takeshi Hirayama told a Medical World News reporter (23).

Studies in animals and humans in recent years have indicated that dietary vitamin A, which green and yellow

vegetables are high in, might have an inhibitory effect on pulmonary carcinogenesis. For example, a study in Norway considered vitamin A intake and smoking habits in relation to subsequent development of lung cancer. The author said that his findings were in accord with experimental results in animal studies and "call for further exploration of the role of nutritional factors in the development of lung cancer" (24). He added that the association of lung cancer with cigarette smoking "may have held back" attempts to study relationships between nutritional factors and lung cancer.

Whether regular consumption of green and yellow vegetables or a deficiency of Vitamin A should be considered important in lung cancer causation is not clear. But a special task force meeting in Stockholm's famous Karolinska Institute in 1977 took it seriously. Although the scientists were strongly opposed to smoking, they said that the evidence on vitamin A is "thought-provoking and needs to be followed up" (25).

#### Animal Experimentation

Results of some animal experiments have been applied to man to support the claim that cigarette smoke causes cancer.

There are many serious, perhaps irresolvable, problems in any extrapolation of animal results to humans. Lung

cancer of the type associated with cigarette smoking in men has not been produced in animals in inhalation studies (26). And severe criticism has been levelled at certain of the studies because of unrealistic experimental situations which could scarcely be comparable to the human experience -- for instance, extremely high dosages over a short period of time (27-29). There are, obviously, also significant differences between the tissues of man and laboratory animals, and that makes it difficult to draw any conclusions about the human relevance of animal results.

#### Conclusion

The claim that cigarette smoking causes lung cancer has not been scientifically proven. The charge ignores basic unresolved scientific questions concerning cell types, animal experimentation, smoking patterns and lung cancer rates, dietary influences and diagnostic variations. Lung cancer is a complex disease, and a one-sided attack on cigarette smoking as the causal agent does nothing to advance the search for its cause and cure.

Within a generally negative presentation on smoking, the pathology department chairman at UCLA told a Public Health Service meeting only a year and a half ago:

Although epidemiological data has clearly established the existence of a correlation between smoking and

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[lung cancer], a clear-cut causal relationship between cigarette smoking and cancer has not been demonstrated (30).

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### Other Cancers

NCI's yearly reports to Congress have cited various prospective and retrospective population surveys to support claims of statistical relationships between cigarette smoking and cancers of the oral cavity, bladder, esophagus, larynx and pancreas (1, 2). However, close examination of the incidence rates of these diseases reveals many unexplainable patterns that are almost impossible to reconcile with the hypothesis that cigarette smoking causes them.

The incidence rates usually cited for these cancers, and their time patterns, have been derived from data collected

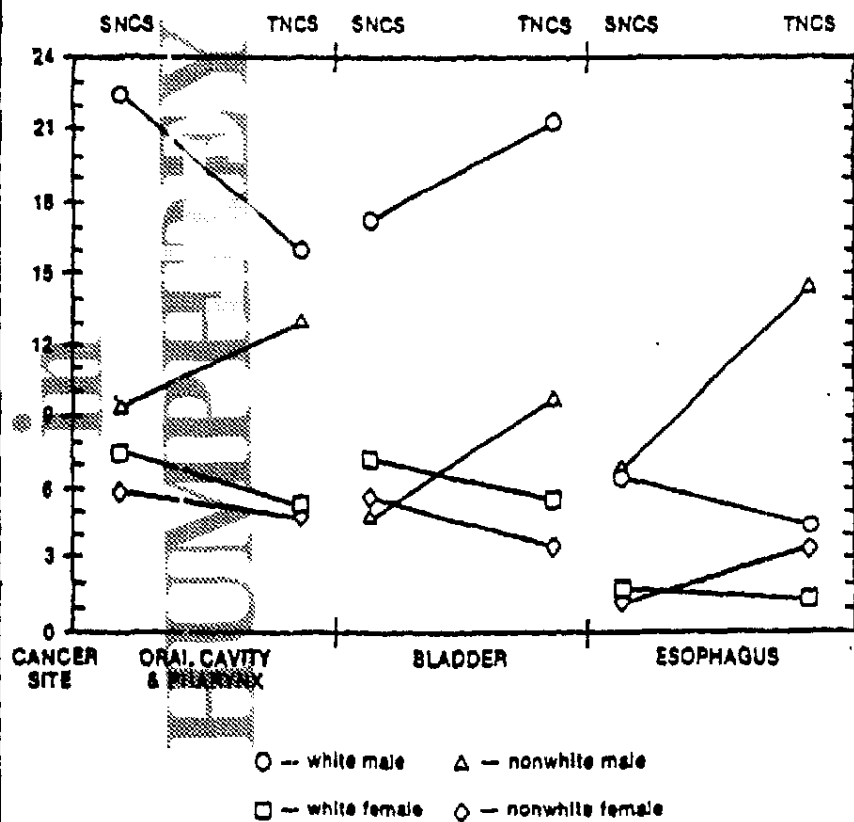
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The establishment of any relationship between smoking and cancers of the larynx, esophagus and bladder must involve considerable guesswork, because of the greatly different incidence patterns and trends of these diseases and multiple suspected causes.

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in two large-scale studies, conducted 25 years apart, by the Public Health Service: The Second National Cancer Survey (SNCS), 1947-49, and the Third National Cancer Survey (TNCS), 1969-71. Some data from the First National Cancer Survey, 1937-39, are no longer available, but comparative data from the Second and Third, for the seven geographic areas that they had in common, were published by the National Cancer Institute last year (3). More than 20,000 cancer cases were included in the SNCS, more than 125,000 in the TNCS.

Figure 1  
Incidence Rates\* per 100,000 Population from  
Second National Cancer Survey (SNCS) (1947-49) and  
Third National Cancer Survey (TNCS) (1969-71)



\*Age adjusted to the 1950 U.S. population standard.  
Source: Deves and Silverman 1978 (3).

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The graphs in Figure 1 illustrate such incongruities as incidence rates rising, falling or remaining stable depending on disease, gender and race. Even when one considers the so-called "lag period" -- the time between the action of the alleged causal agent (starting smoking) and the diagnosis of the disease -- the graphs still do not support the claim that cigarette smoking is the causal agent. For example, nonwhite male rates for cancers of the oral cavity and pharynx were up by almost 40 percent in 23 years, while the rates for white men and women were down by approximately 30 percent. The rates for nonwhite females decreased, too, but not so sharply. Further, similar peculiarities in the rate patterns can be observed for cancer of the bladder. The rates for males, both white and nonwhite, increased markedly -- especially the nonwhite male rate, which nearly doubled. The rates for both groups of females were sharply down.

Some critics of cigarettes have claimed that blacks and other nonwhites may have been slower to take up cigarette smoking in any numbers and are therefore later in showing increases in the "cigarette-related" diseases. This contention is not supported by the data, as illustrated in Figure 1. On the other hand, the National Cancer Institute researchers have suggested another explanation for these trends in nonwhites, namely that other factors such as access to medical care and improved diagnosis may partially explain the increased incidence in some of these diseases in blacks.

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Although claims have been made that smoking causes oral and pharyngeal cancers, such conclusions are not supported by an examination of the available literature. A number of studies, for example, have failed to establish a relationship between smoking and oral cancer (4, 5) and smoking and pharyngeal cancer (5). Recent studies on tobacco and oral and pharyngeal cancers have examined the possibility of a substantially higher risk for development of these cancers in individuals who both smoke and drink. One study in 1977 reported such an increased risk in patients examined in 20 hospitals in eight American cities (6). However, this was not confirmed by two

### Oral/Pharyngeal Cancer

Other published studies and surveys indicate that no firm statements of causality correctly can be made about smoking and any of these cancers which have been statistically linked with cigarettes.

But these factors can hardly account for the jump in esophageal cancer in nonwhite males while white male incidence was dropping, the increase in bladder cancer in nonwhite men while it dropped in nonwhite women or the decrease in oral/pharyngeal cancer in nonwhite women while it climbed steeply in nonwhite men.

Produced by RJK



other studies of oral cancer patients published the same year (7, 8). Interestingly enough, one (7) pointed to another factor -- poor dentition or tooth spacing -- as a more important risk factor than either cigarettes or alcohol.

Attempts to study the possible influences of cigarettes and alcohol in the development of oral and pharyngeal cancers are complicated, because individuals who smoke also are more likely to drink. Therefore, it is difficult to determine what -- if any -- roles these social habits play.

#### Esophageal Cancer

A biostatistician from the International Agency for Research on Cancer in France recently reviewed worldwide patterns of esophageal cancer and certain epidemiological data (9). He concluded that "the data strongly suggest that factors associated with poverty and specific limitations of dietary intake increase susceptibility for this disease."

This researcher noted "exceptionally high rates in some areas," and "a higher incidence among the lower socio-economic groups," most markedly in females. He said that although there is a statistical association with tobacco and heavy alcohol use in the U.S. and Western Europe, in much of the rest of the world they are not "factors of major importance."

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"A considerable array of external factors have been associated with the disease," he said, "but none strongly enough or with sufficient consistency between countries for their etiological role to be basic."

In another recent study, researchers examining the incidence of esophageal cancer in Southern Iran found that the risk of this cancer in males and females was "at least nearly equal," even though cigarette smoking and alcohol consumption are "almost exclusively male" habits in this region (10). This observation led them to speculate that "it seems probable that the etiology of the disease in this region is not explainable by association with tobacco smoking and/or alcohol use, since these habits do not correspond with the epidemiology of the disease as found in this study."

#### Laryngeal Cancer

After examining nearly 200 patients with laryngeal carcinoma, an English otolaryngologist questioned the claim that smoking causes this cancer (11). He observed that "the incidence of laryngeal cancer has remained more or less constant for 70 years -- a period in which tobacco consumption . . . [has] risen sharply." He also warned that "any data showing a correlation between heavy cigarette smoking and laryngeal carcinoma must be interpreted with caution because in the entire population the incidence of laryngeal carcinoma

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has been remarkably constant."

The British physician's conclusions are supported by the work of an Argentinian who examined the smoking habits of 187 cancer patients in three cities (12). Statistical analysis of the data, he said, revealed "values [for smoking] that are not significant, consequently not indicating a dependency between the presence of the studied cancer and the smoking habit." He said, "We can therefore hypothetically assume that other factors, besides the significance of the smoking habit, must logically affect the etiology of these pathologies."

Smoking apparently also was discounted as a causal factor by a British scientist who investigated the possible relationship between alcohol and tobacco use and laryngeal cancer by examining disease and death rate patterns (13). One problem, he said, is that trends in mortality rates in different age groups show contrasting characteristics. He found, after drawing up time trend charts by five-year age groups, that the more or less consistent fall in death-rates in both sexes -- while per capita consumption of alcohol and cigarette use rose in both sexes -- "would seem to be incompatible with the hypothesis that tobacco and/or alcohol are major causal agents."

Before his discussion of the data on laryngeal cancer, he had commented on the need to use all available data

in attempting to determine disease causation: "There can be no doubt that epidemiologists have the professional responsibility for elucidating the causes of disease with all the ingenuity and thoroughness they can command." But with a wryness rare in medical journals, he also noted that "crying wolf in the absence of the marauder is generally held to be counterproductive."

#### Bladder Cancer

A number of studies examining the incidence of bladder cancer have found no association between cigarette smoking and the occurrence of bladder tumors (14-16). Inconsistency in the conclusions of reports examining the relationship between smoking and bladder cancer and "the relative weakness of the evidence for an association in females" led the journal *Lancet* to "suggest the need for caution in interpretation" of such studies (17).

A major paper on bladder cancer was published by the National Cancer Institute in late 1978 (18). The two government epidemiologists looked at the geographic patterns identified in their institute's "cancer atlas" (19) (see Cancer In Workplace chapter).

Bladder cancer maps, according to these researchers, showed "significantly higher" rates among males in the North-

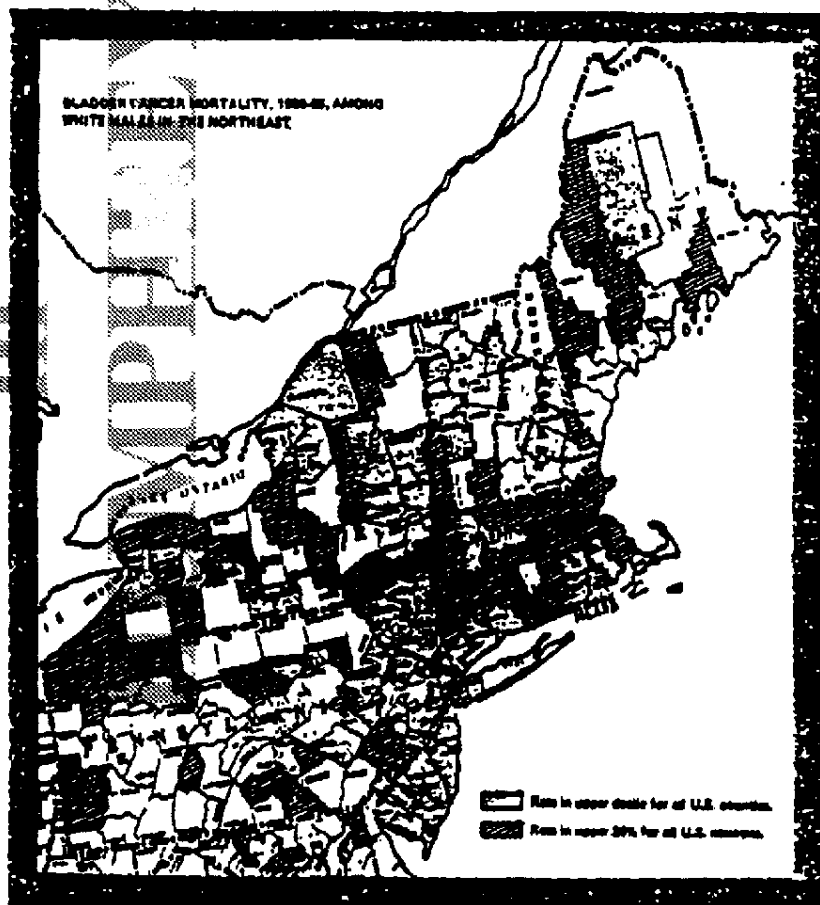
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Figure 2

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east and in countries with heavy concentrations of plants manufacturing dyes and pigments, pharmaceutical preparations, perfumes, cosmetics and certain other toiletries.

The authors confirmed an increase in bladder cancer in urban areas, which one of them had previously hypothesized to be due to heavier cigarette smoking in city dwellers (20). Now they said, "Cigarette smoking, however, is not likely to be responsible for the elevated mortality in the Northeast, in as much as the available national surveys show only small regional differences in smoking practices."

They also noted that bladder cancer is the only "smoking-related" cancer for which death rates among males in Northern urban areas are lower in blacks than in whites. They surmised that the lower risk might be due to limited employment opportunities for blacks, especially pre-1960, in industries where workers may be exposed to chemical carcinogens.

In another study published in late 1978, WCI epidemiologists associated the levels of certain contaminants of municipal drinking water with bladder cancer in both sexes. The researchers said an interaction of chlorine with other substances in water treatment plants, and sometimes contamination from industry create trihalomethanes (THMs) in varying quantities. The researchers said bladder cancer rates showed the strongest and most consistent association of all cancers

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with their FPM exposure index after control of other factors, including industrialization of the county studied (21).

#### Cancer of the Pancreas

The inconclusive nature of research in pancreatic cancer is illustrated by a statement in the 1976 report on "The Health Consequences of Smoking" (22). The authors of the report examined the association with cigarette smoking and concluded that "the significance of the relationship is not clear at this time."

The so-called "smoking-related" cancers have been reported to occur less frequently among predominantly Mormon populations (23). It has been hypothesized that the Mormons' abstemious way of life is responsible for the phenomenon, as they advocate no alcohol, tobacco, tea, coffee or drugs, especially the addictive sort, and they stress moderation in the use of meat.

One exception to the Mormon hypothesis was demonstrated in a recent study in Utah that analyzed all cancer cases identified in the state between 1966 and 1970 and compared the incidence found in Utah residents (both Mormons and non-Mormons) to that of the total population covered in the Third National Cancer Survey (24).

Records of more than 10,000 cases in the state

cancer registry showed no significant difference by religion in pancreatic cancer incidence. Both Mormons and non-Mormons, as a matter of fact, had a low incidence of the disease compared to TACS incidence, which, said the Utah researchers, "raises the question of other, unidentified factors."

#### Conclusion

In a paper published in early 1978, one of the top epidemiologists at the National Cancer Institute reviewed, much as we did at the beginning of this chapter, the incidence of some of the cancers with which smoking has been linked (25).

Discussing the trends in "head and neck cancers" he noted many of the same inconsistencies we did. And he said:

For these diseases, at least, it is not likely that any one single etiology will give a satisfactory explanation...What does this imply? It implies that we've got to look for more clues. . . New clues should lead to new inquiries and new answers.

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### Cardiovascular Disease

In 1949 in Framingham, Mass., the U.S. Public Health Service started a program of close surveillance of more than 5,000 adult men and women selected by random sampling. The major objective was to attempt to determine why individuals would develop evidence of coronary heart disease (CHD).

Through questionnaires and painstaking observations, the researchers would record the variables in lifestyle, environmental characteristics, familial traits and other factors believed to relate in any way to CHD. Then they would see which of these variables were most common in those persons

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a fair appraisal of the evidence, examined in its entirety, indicates that the risk of coronary heart disease is strongly associated with genetic and lifestyle factors.

---

who did develop heart disease symptoms. And they would try to analyze statistically the relative importance of each of the variables in the occurrence of those symptoms.

From that community-wide study, there developed the concept of "risk factors" in CHD and other diseases (1). The Framingham study originally found statistical relationships between heart disease and high serum cholesterol level, elevated blood pressure, cigarette smoking, obesity and low

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vital capacity (2). The researchers stated last year that elevated blood pressure "has been confirmed as the dominant contributor" to heart disease in the Framingham study, but that they are continuing to study the possible role of other "risk factors" in the development of heart disease (3).

The presence of an association, however, is neither proof of causality nor a demonstration that the elimination or reduction of a risk factor will prevent the occurrence of disease (4). Though one might not know that from the statements of some government health officials (5-7).

Dr. Christian Barnard, the famous heart surgeon, has provided an illustrative analogy on this point:

(If the statistician can do no more than point out the existence of an association between two variables; he cannot prove a cause-and-effect relationship between them. Stated more simply, an association between a particular diet and the incidence of coronary heart disease can be demonstrated, but that does not by any means prove that following that diet causes heart disease. I am sure an association could be shown between the absence of legs and the inability to respond to the verbal command "Jump." But this would not prove that people hear with their legs (8).

The director of the Heart, Lung and Blood Institute reached such a conclusion, however, in addressing a meeting of medical writers in 1977. He told them that elimination of smoking would reduce CHD mortality by 150,000 deaths per year (9). Less than six months later, on Capitol Hill to justify his institute's budget, he told House Appropriations Committee

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members that "we still don't know the etiology of arteriosclerosis and hypertension" (10). He said his researchers are "testing the hypothesis...that lowering cholesterol and cessation of smoking will delay or prevent the onset of heart disease" (emphasis added).

It becomes obvious that scientists know little more about CVD causation now than they did in 1964 when the original Surgeon General's report said that "the basic cause or causes of coronary heart disease are obscure" (11).

One thing scientists do know is that heart disease death rates are down. In fact, a meeting was called in Washington last October to discuss a 14-year low in heart disease death rates (12). Vital statistics presented at the meeting revealed a 24 percent decrease over-all in CVD since 1968, while deaths from all causes dropped only 17 percent. Rates for cerebrovascular diseases were down even more (13). See Table 1.

Meeting participants, who included heart and public health specialists from across the nation, basically agreed that the decrease in the death rates for the nation's leading cause of death was real and not just some statistical aberration. After all, the rates were down in both sexes, in both whites and nonwhites and in all age groups (14). But they could not decide whether improved treatment techniques of recent years or improvement in what heart researchers call

Table 1

Per Cent of Decrease in Mortality Rates  
United States, 1968 to 1976  
Persons Age 35-74, by Sex and Race

Cause of Death	Per Cent of Decrease 1968 to 1976, by Sex and Race				
	White Men	White Women	Nonwhite Men	Nonwhite Women	All
Coronary Heart Disease	-21.0%	-26.5%	-30.7%	-39.1%	-24.3%
Cerebrovascular Disease	-30.6%	-30.4%	-43.7%	-47.1%	-32.7%
Major Cardiovascular Disease	-20.9%	-26.1%	-33.2%	-40.7%	-24.6%
All Causes	-15.3%	-16.4%	-24.8%	-32.7%	-17.3%

Source: Statist. 1978 (13)

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"America's risk factor profile" should be given credit for the brighter picture (15).

After all, as the Framingham project director had noted earlier in the year, many persons have become more health conscious and have "gradually changed their life-styles with regard to dairy products, exercise, weight-watching, antihypertensive treatment, and cigarette smoking." This has all coincided with the decline in coronary mortality, he said, "but the existence of a causal relationship is unclear" (16).

Attempts to determine the causes of heart disease have been complicated in the last few years by the recognition of other possible risk factors. These include family history of heart attacks (17), urban vs. rural residence (18), viral infection (19) and a factor called "acculturation" (20, 21).

This last variable -- to many, one of the more worthy of further investigation -- relates to the departure of younger persons from the traditional and family-oriented ways of their elders. As their lives change, so do their risks of major heart disease. And this enhanced risk can not be explained statistically by changes in diet, cholesterol levels, blood pressure or smoking.

A recent example of this was reported from a continuing NIH-funded study of CHD incidence in Japanese citizens and individuals of Japanese ancestry in Hawaii and California

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(20). Another example is the experience of a small, close-knit Italian village in Pennsylvania that over the years became more like a typical American suburb (21).

The stresses of modern living extend from city to tiny mining community, from executive office to farmyard, which brings us to another relatively unexplored variable in heart disease, the Type A behavior pattern. Persons who exhibit a Type A behavior pattern are chronically in a hurry, pushing constantly to keep up with the Joneses, seeking recognition and advancement, suffering from what the two physician researchers who have identified the pattern call a "paucity of time itself" (22).

These Type A persons, as one could guess, are more coronary prone. Four papers published since 1977 add to the growing literature on the subject and strengthen the belief of many scientists that further exploration is warranted (23-26).

A potentially unifying link with a wide variety of these "risk factors" was postulated recently by a Columbia University physician researcher in a study of male heart patients. This researcher believes that an imbalance in sex hormones in the bloodstream may account for an individual getting heart disease (27).

Commenting on his research, Dr. Gerald S. Phillips told The New York Times further studies are needed to examine

women and older men who have heart attacks. He said he expects to find the same imbalance in them. And if further studies by himself and others sustain his theory, he said, "it should not be difficult to change the blood hormone levels in order to prevent a heart attack" -- by diet, drugs or other means (28).

The Times commented that if Dr. Phillips' theory is right, "hormone changes could explain why heart attacks occur most often in older men and in post-menopausal women" (29).

Two British researchers also have speculated that hormones may play a role in the development of CHD (30). From their study of mortality rates in England and Wales, they concluded that "further studies are needed to clarify [the role of male sex hormones] in the aetiology of CHD in men."

Despite this emphasis on the determination of "risk factors", physicians and researchers have questioned whether they are really relevant in any discussion of the development of CHD. For example, a West Virginia heart specialist wrote in American Heart Journal that "all of us know that every good cardiologist must repeat these words [he called hypercholesterolemia, smoking and obesity the "magic incantation"] three or four times daily to reaffirm his belief in what has been accepted as causative factors

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of this dread illness. However, few of these relationships have proved definitive". He also suggested that:

Our primary need in cardiology today is a few heretics who will abandon the practice of equating statistical association with the etiology of atherosclerotic heart disease. This would mean a greater emphasis on the causation of atherosclerosis itself (31).

A physician in Ireland considered what he called the "major risk factors", but his weren't exactly the same three as the West Virginian's. He came to the same general conclusion as the American, however, writing in Journal of the Irish Medical Association that there is "no evidence in man to support the contention that the control of elevated lipids, cessation of cigarette smoking or the control of hypertension retards the development of the atherosclerotic process or delays the rate at which coronary artery stenoses develop once these processes are established" (32).

As a well-known American epidemiologist has written in New England Journal of Medicine limitations in the current knowledge of the etiology and methods of prevention of CHD "argue for widening the search for contributing causes and possible dynamics of pathogenesis, rather than merely intensifying the study of the few traditional 'risk factors'" (33).

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### Carbon Monoxide

Carbon monoxide (CO), a colorless, odorless and tasteless gas produced by the burning of any material containing carbon, has been thought by many to be the component of cigarette smoke that might explain the statistical association between smoking and CHD.

In early studies, rabbits chronically exposed to CO and fed a high cholesterol diet were found to have more arterial changes similar to early atherosclerosis in man than did animals on a similar diet but not CO-exposed (34-39).

"Does CO play a role in arteriosclerosis?" one of the most prominent researchers in smoking and health asked rhetorically of an American Cancer Society audience in Philadelphia 18 months ago. Answering his own question, he said, "It certainly works in rabbits, but there's considerable doubt whether it works in man" (40).

Well, now it doesn't appear to work in rabbits, either.

Poul Astrup, one of the researchers who did the animal experiments with CO, recently reported that he and his group have been unable to reproduce their results (41-43). In a presentation describing these findings, they said that "no direct toxic effect of CO" could be demonstrated (42).

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### Nicotine

Although claims have been made that nicotine causes heart disease, a number of researchers and physicians have questioned the basis for such assertions. For example, one heart specialist wrote recently in American Heart Journal that "so far no one has found any direct effect of nicotine on the heart other than that it somewhat increases heart output" (31). His position is supported by a German researcher, who stated in 1977 that "nicotine has been unjustifiably suspected for years" (44).

The scientists who claim that nicotine causes heart disease have relied upon the results of animal experiments. But as one researcher who has conducted such experiments pointed out, daily dosages of nicotine used in these experiments were "equivalent to approximately 175 to 325 cigarettes per day in man, certainly an excessive and unrealistic amount" (45). In animal studies using realistic dosages, nicotine failed to initiate, exacerbate, or otherwise influence the atherogenic process in test animals (43, 46).

Therefore, claims that nicotine, carbon monoxide or other components as found in tobacco smoke cause heart disease are not supported by the medical literature. As one British physician summarized the controversy, "Cigarette smoking is associated with a tendency to develop heart disease but there

is no satisfactory epidemiological or experimental evidence to implicate the contents of smoke with disease of the coronary arteries" (47).

### Stroke

HEW's 1973 report to Congress on smoking and health (48) said there has been "conflicting evidence on whether there is an increased risk of cerebrovascular disease due to smoking." In 1977, there was evidence from Johns Hopkins researchers that further confused the issue.

Their epidemiological study of the differences in stroke mortality in three U.S. cities with low, intermediate and high rates of cerebrovascular disease was unable to account for them on the basis of smoking (49). They concluded that "there is a strong possibility" that physical and social environmental factors other than those presently known "may account for the observed geographic differences in mortality."

The Johns Hopkins investigators noted that findings in past research work by others had also been "inconsistent". Although researchers in the past have studied risk factors associated with cardiovascular diseases as possible causes of stroke because they assumed all these diseases are related, this line of speculation has been discounted.

"Cerebrovascular diseases are not simple extensions

Table 2

25-Year Trends of Age-Adjusted Mortality in the United States

	Cerebrovascular Diseases		Heart Diseases	
	Deaths/100,000	Decrease (%)	Deaths/100,000	Decrease (%)
1950	84.8	--	307.8	--
1960	71.7	-10.2%	286.2	-6.8%
1969	61.3	-23.0%	262.3	-14.6%
1976	51.4	-42.4%	216.7	-29.4%

Source: Towner 1978 (50)

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or analogies of cardiovascular diseases," said one PHS official recently. "The fact is that strokes are neurological disorders and neuroepidemiological problems" (50).

He is Donald B. Tower, who heads PHS's National Institute of Neurological and Communicative Disorders and Stroke, and the emphases were his, not ours.

Dr. Tower addressed the Symposium on World Neurology in Montreal in September 1978. Stroke, he said, is "probably the most devastating and disabling of human disorders," prevalent in every country regardless of economic, ethnic or cultural characteristics. And stroke "ought not to be equated epidemiologically or pathophysiologically" with cardiovascular diseases.

"When one examines stroke mortality over the past 25 years, the age-adjusted rate has decreased strikingly -- over 42 percent in the last quarter century [see Table 2] and a decrease nearly 10 percent greater than that for heart disease." He said hypertension appears to be an important risk factor in stroke, but that there are countries like Nigeria and Senegal with high incidences of hypertension and of stroke but very low incidence of heart attacks. High cholesterol level, an established risk factor in countries like the U.S. and Japan, he said, poses "little, if any, risk for stroke" in the African countries.

"We do not yet have the answers," said Dr. Tower.

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### Conclusion

Since the work of the Framingham study helped produce the concept of "risk factors" supposedly associated with the development of CHD, it might be justified to conclude with a recent observation by its director and a PHS statistician who has also studied the data:

A number of prominent cardiologists have lately expressed skepticism about the role of risk factors in cardiovascular disease and about the preventive and therapeutic efficacy of modifying them (16).

The extent of current medical understanding of CHD causation was perhaps well described in the Annals of the New York Academy of Sciences: "The vast majority of individuals destined to develop and die from atherosclerotic disease do so for as yet unknown reasons" (51).

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Chronic Obstructive Pulmonary Disease (COPD)

The noncancerous lung diseases that have generally been associated with cigarette smoking are chronic bronchitis and emphysema (1-10). Bronchitis and emphysema are recognized as the most important of the disease group called chronic obstructive pulmonary disease (COPD), chronic obstructive lung disease (COLD) or chronic obstructive airways disease (COAD). No matter what you call these diseases, however, scientists understand neither their origin nor their mode of development (11-13).

The confusion about COPD is reflected in the contradictory pronouncements by various Public Health Service agencies in recent years. Although numerous PHS pamphlets

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The uncertainties and unknowns in the medical understanding of COPD permit no firm conclusions about smoking.

---

proclaim that cigarette smoking is the main, if not the only cause of COPD, other more candid PHS statements indicate the lack of knowledge regarding COPD causation.

One of the better examples of this inconsistency occurred in 1973 when one branch of the Public Health Service recognized this lack of scientific knowledge while another PHS branch was finishing its annual condemnation of cigarettes.

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the 1973 HEW report to Congress (9). The yearly report, prepared by the National Clearinghouse for Smoking and Health, proclaimed that "cigarette smoking is the most important cause of COPD". But the director of the National Heart, Lung and Blood Institute, the HEW agency responsible for COPD research, testified before Congress that "the etiology, the cause, in other words, of the disease [emphysema] is really not known, to be truthful with you" (14). And two years later a National Heart, Lung and Blood Institute submission to Congress stated that "the exact etiology of emphysema and other chronic lung diseases is unknown" (15).

COPD causation and mode of development is complex, yet much of the published work on COPD operates almost on the presumption that cigarette smoking causes COPD -- perhaps to the detriment of advances in COPD research. In 1975, one investigator summarized this concern when he said that recent emphysema investigation has been concentrated on too few areas -- including cigarettes -- "unfortunately practically to the exclusion of other hypotheses." He went on to discuss other hypotheses, the pursuit of which might prove at least as important as those presently emphasized (12).

Even more recently, researchers from Mayo Clinic also recognized the need for further scientific investigation, writing, "It remains a fruitful area of research to identify important components in the multifactorial etiology of COPD" (16).



A brief review of recent developments in the study of COPD clearly illustrates the validity of the opinions expressed by these researchers, all of whom are well known and well respected in their field -- clinical and epidemiological research in COPD.

#### The Family Factor

Within the past few years, investigators have begun to reassess the importance of what has been called a "family factor" in COPD development. The precise definition of this phenomenon has yet to be formulated, and the factors responsible for it "remain in large part unstudied" (17).

Two population studies that the Public Health Service has supported indicate that this "family factor" may be of greater importance in the prevalence of COPD and its symptoms than any cigarette association (17, 18). The projects are at Harvard, where researchers are studying persons in East Boston, and at the University of Arizona College of Medicine, where a team of investigators is following lung disease in 3,000 persons of all ages in Tucson.

Additional support for the significance of this "family factor" was the work published in 1977 by two other groups of researchers. After studying first-degree relatives of both lung cancer patients and COPD patients, one group reported that first-degree relatives of COPD cases had signifi-

cantly increased rates of pulmonary dysfunction that could not be accounted for by any of such factors as age, sex, race, smoking or socioeconomic differences (19).

The other group compared COPD prevalence in the parents and siblings of COPD patients with the parents and siblings of matched controls. They found that siblings of the COPD patients had two to three times the frequency of COPD found in the controls' siblings (16).

#### Childhood Diseases

Investigators in the Tucson project have recently discussed another factor of potential importance. They found indications in their data that the individual who has repeated acute episodes of respiratory diseases as a child faces an increased risk of developing COPD as an adult (11). This was true, they reported, whether or not that person smoked as an adult (20-21).

#### Adult Infection

A JES-funded study of respiratory disease in Tecumseh, Mich., has provided another possibly important clue regarding COPD development. In July 1977, members of the research team summarized their study of acute respiratory illness in the community. They suggested that such illnesses

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in adults as well as children might play a significant role in the subsequent pathogenesis and development of COPD. They also noted that smoking did not increase susceptibility to those infections (22).

#### Clearance Mechanisms

Another area of concern in COPD research is the question of alterations in pulmonary defense mechanisms that might eventually lead to COPD.

In normal lungs there are natural defense mechanisms capable of removing bacteria and other foreign bodies from the respiratory tract. One of these mechanisms is mucociliary transport, which involves the cilia lining the respiratory tract. These cilia are tiny flexible threads of cells that "beat" and slowly move any impurities up and out of the respiratory tract. Investigations of smoking and mucociliary tracheal transport rates (MTTs) have been inconclusive (3,8). Although some studies have suggested that cigarette smoke may inhibit this mechanism, other work has found either no effect or a slight effect accompanied by compensatory activity (23, 24). Now new work in Canada suggests that some of the reported findings of inhibition may have been artifactual or a result of unrealistic doses.

Researchers in Toronto have designed a new mechanism

for measuring MTTs in people (25). The MTTs reacted as expected to stimulant and anti-stimulant aerosol sprays, the investigators reported in 1975. But neither acute (short-term) nor chronic smoking showed any appreciable effect on the clearance rates.

The pulmonary alveolar macrophage serves another critical function in lung protection. The macrophages "kill" bacteria to which the lung is exposed and ingest them, along with other foreign material reaching the lung. Some studies have suggested that cigarette smoking inhibits macrophage function, but others found no adverse effects (26, 27).

Researchers have found that smokers' lungs have greater numbers of macrophages than nonsmokers'. Suggestion has been made that increased levels of certain enzymes present in the macrophages may be involved in emphysema development. Last year, however, researchers actually measured levels of the enzymes they thought might be most important; they compared the amounts found in COPD patients and healthy individuals, and found no difference (28). Thus, although they appeared convinced that smoking is involved in COPD development, they were unable to provide support for this opinion.

#### Small Airways Obstruction

It has been suggested that certain changes in the

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periphery of the lung -- detected in some smokers -- may be a first stage of COPD. Yet a recent review of the subject commented that:

Although these abnormalities can be found in some smokers, it is not at all clear whether chronic obstructive lung disease will eventually develop in these people. Long-term follow-up studies will be necessary to establish this point (29).

#### Other Factors

Scientists have known since the early 1960s of a genetically determined enzyme deficiency that might explain an apparent susceptibility in some individuals to certain types of COPD. Research continues on the import of various levels of this deficiency in alpha-one-antitrypsin.

In recent years, environmental air pollution has come under increasing attention as a possible cause of COPD. Public health researchers in Berkeley, for example, reported in 1975 that the 1974 fuel crisis, which resulted in reduced levels of automobile exhaust pollution, was apparently accompanied by reduced levels of respiratory disease. "Dramatic decreases were noted in death rates for several major categories of disease...The disease showing the greatest relative change was chronic lung disease", said the Californians (30). It has also been suggested that the decline in COPD mortality rates in England are due to London's significant reduction in

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air pollution levels (31).

#### Open Questions

If all the answers were complete, and if cigarette smoking always and irrevocably caused COPD, why would such a staunch anti-smoker as Sir Charles Fletcher have conceded in the midst of his polemic against smoking (32) that "most smokers suffer no substantial obstructive damage"?

And how does one explain the report by a PHS team just last October of "an extraordinary" prevalence of COPD among Micronesians? The investigators wrote that almost half of the middle-aged adults on two Western Caroline islands had chronic bronchitis, and COPD was the most important cause of disease and death there. Yet respiratory disease occurred as frequently in nonsmokers as smokers, and "exactly the same pattern of prevalence, onset, and consumption of cigarettes was observed in adults with no respiratory disease" (33). The PHS epidemiologists concluded with a call for more research into both "environmental and genetic possibilities" to explain these observations.

Perhaps the most important question yet to be resolved is What is COPD? At least part of the difficulty involved in examinations of COPD causation and development is the confusion that arises just in trying to define COPD -- or

bronchitis, or emphysema. In many cases the diseases cannot be distinguished from each other - a problem that was recognized in the 1967 NIV report to Congress:

Inability to distinguish between chronic bronchitis and emphysema has hampered medical research and exchange of information (2).

Occasionally, clinicians have even been reduced to using such nonscientific phrases as "blue bloaters" and "pink puffers" to help them identify certain manifestations of these diseases (36).

Until this confusion is resolved, any epidemiologic conclusions about the relationships between COPD and other factors--including cigarette smoking--must remain merely conjecture.

#### Conclusion

COPD is complex and poorly understood. The confused clinical picture and lack of agreement regarding pathogenesis, mode of development and pathology combine to make the disease virtually undefinable. Nevertheless, all too many discussions continue to treat COPD as a well-defined, well-understood clinical entity with only one significant cause -- cigarette smoking.

A New York doctor wrote a few years ago that "in

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humans, only two lines of evidence have linked cigarette smoking and emphysema: one is statistical and the other is political."(35). There is a good deal that scientists do not know about COPD. Perhaps some of the recent developments in COPD research may help increase medical knowledge of this disease.

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### Appendix

On two days in January 1978 a public official and a large, private, medically related organization each issued statements which were misleading, inaccurate and which both should have known were unsupportable:

In 1977 alone, more than 300,000 people died from cancer, heart disease, and lung disease attributable to smoking.

Joseph A. Califano, Secretary  
of Health, Education and Welfare  
(1)

Last year, smoking was a major factor in 220,000 deaths from heart disease; 78,000 lung cancer deaths, and 22,000 deaths from other cancers, including cancer of the mouth, cancer of the esophagus, cancer of the pancreas, cancer of the kidney and cancer of the bladder.

Joseph A. Califano, Secretary  
of Health, Education and Welfare  
(2)

Cigarette smoking was related in 1977 to:

- more than 320,000 deaths.

American Cancer Society (3)

This contention of "excess deaths" has been pivotal

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to the smoking and health controversy for more than 15 years. Although the figures vary depending on who is giving them and when, and how much shock impact the "authority" wishes to create, they have been quoted, repeated and misunderstood so much that many people accept them uncritically.

None who uses the figures can say accurately where they originated. One health official quotes a public relations practitioner as the source while the latter claims they came from "the government." Media occasionally attribute them to their newest source but increasingly provide no attribution at all.

This paper will attempt to trace the origin of the "excess death" figures, show how they have been "harked up" (or down) and, finally, will show how vulnerable such statistics are to misuse.

Where did the figures come from which Secretary Califano cited on January 11, 1978, and the American Cancer Society parroted three weeks later?

The "excess deaths" concept grew primarily from various pre-1964 surveys comparing smokers and nonsmokers by two Britons, Richard Doll and A. B. Hill, and those of Daniel Horn and E. Cuyler Hammond of the United States. Much of their data was used, in one form or another, in the preparation of the 1964 Smoking and Health report by the Advisory Committee to

the U. S. Surgeon General. However, as we will see, that report wisely warned against the concept.

In her book, "Smoke Screen: Tobacco and the Public Welfare", published a year before the Surgeon General's report, Senator Marjorie M. Neuberger quoted Dr. Korn as saying it would be his "best guess" to blame smoking for "300,000 to 500,000... deaths per year" (4). Korn himself apparently came to regard that as an exaggeration, and subsequently he confined his "excess deaths" estimates to 300,000 or fewer.

The Surgeon General's report itself rejected the theory of "excess deaths": "The total number of excess deaths causally related to cigarette smoking in the U. S. population cannot be accurately estimated" (5).

Why did the advisory committee take this position? The Assistant Surgeon General, who was vice chairman of the advisory committee, gave the reason at a news conference at the time the report was released: "The Committee considered the possibility of trying to make such calculations but it involves making so many assumptions that the Committee felt that it should not attempt this..." (6).

But others ignored this restraint. On January 11, 1963, the first anniversary of the Surgeon General's report, Emerson Foote, an advertising executive and chairman of an organization called the National Interagency Council on Smoking

and Health, began a new round of "excess deaths" speculation in a news release: "Estimates made by scientists who have spent years studying the problem, vary depending upon the way that the data are interpreted." Nevertheless, he went on to assert, "It may be said with sureness that cigarette smoking is today responsible for at least 125,000 deaths each year in the United States. Cigarette smoking may be responsible for as many as 300,000 deaths per year in this country" (7).

Once someone, no matter what his or her expertise or objectivity might be, had broken the ice and made the claim publicly, many others felt free to quote it. A month later, for example, Dr. Horn, who had become chief of the Special Projects Section within NCI's Cancer Control Program, told school administrators in Atlantic City that "Emerson Foote, Chairman of the National Interagency Council on Smoking and Health, has stated that cigarette smoking is responsible for at least 125,000 premature deaths this year" (8).

In March 1965, the U. S. Senate began hearings to determine what legislation might be appropriate in light of the Surgeon General's report. Foote testified. Senator Thurston Morton told him that Horn had quoted "you as his authority." Foote laid the "baby" on the doorstep of the U. S. Public Health Service.

SENATOR MORTON: ...This interests me, that the scientist, the doctor, should be quoting you, the advertising agent. I suppose you quote him. That is the way these things get going. They support



and other.

MR. FOOTE: Absolutely not. May I correct the impression created?

SENATOR MORTON: Certainly.

MR. FOOTE: Would you like to know where I got those figures? Or would you care?

SENATOR MORTON: I would be glad to hear where you got the figures. I am merely saying that Dr. Hays is now quoting you as the authority for these figures.

MR. FOOTE: If he quotes me, that is fine. I didn't ask him to quote me, and I am not the authority for the figures. Would you care to know where I got the figures?

SENATOR MORTON: Certainly.

MR. FOOTE: I got them from the U.S. Public Health Service. And they had plenty of time to check the figures over (9).

As another source, Foote cited Dr. Harold S. Diehl of the American Cancer Society, who was seated with him at the witness table. But Diehl, in a written statement given to the Senate Committee, passed the responsibility to two others. He said that Dr. Morton Levin of Roswell Park Memorial Institute in New York had given data at medical meetings in 1964 which showed "that among males there are 224,717 deaths annually in the country attributable to cigarette smoking" (10). Exactly 224,717 each year!

In addition, Diehl said, Dr. Raimert Ravenholt of the University of Washington School of Medicine in Seattle

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had published a statement in 1964 which said that "in 1962 roughly a quarter of a million excess deaths in this country were due to smoking."

Horn was at the hearing and spoke up. He started to say that the "excess deaths" talk only had to do with reported higher death rates among smokers, without the implication that smoking was the cause. But then he switched to assertions of cause, went far beyond the Surgeon General's report in this respect, and came up with yet another number -- 138,000:

DR. HORN: The figure of 125,000 -- which is a very low estimate of the total number of deaths -- which represents the excess number of deaths, occur in cigarette smokers over what would have occurred if they were to die at the same rate as people who had never smoked cigarettes. It consists of applying the 1962 death rates to the diseases in which a causal relationship has been indicated. These include coronary heart disease, lung cancer, bronchitis and emphysema, cancer of the oral cavity, cancer of the esophagus, cancer of the larynx, and cancer of the bladder.

I am indebted to the original set of figures here, which have appeared in statements of the Public Health Service as long ago as last August, and to Dr. Levin, who has published these figures and is, I believe, scheduled to testify tomorrow.

The number of deaths from coronary disease, which is included in that, is approximately 80,000. The number of deaths from lung cancer is 33,500. The number from bronchitis and emphysema is 16,500. Cancer of the oral cavity, esophagus, larynx and bladder, add up to 8,000. This totals 138,000, which is a little higher than the original estimate of 125,000, but is based on applying them to estimated 1965 deaths from these causes.

Excess Deaths Among  
Male Cigarette Smokers  
Age 18 and Over,  
United States, 1962

Cause of Death	Excess Deaths Among Cigarette Smokers		Total Deaths Males 18 & Over
	No.	Percent of All	
Lung Cancer	29,472	83.5	35,304
Bronchitis & Emphy.	10,002	76.0	13,158
Cancer of Larynx	1,564	72.0	2,172
Cancer of Oral Cavity	2,873	58.6	4,900
Cancer of Esophagus	2,074	52.2	3,972
Coronary Artery Disease	91,797	28.3	324,144
All other causes	89,470	17.0	525,972
All causes	227,252	24.9	909,622

Estimated from data or prospective studies; smokers' distribution, 1955; U.S. population, 1962; U.S. mortality, 1962.

Excess deaths over number expected from non-smokers' mortality experience.

Above is the earliest known tabulation of "excess deaths," presented by Dr. Morton L. Levin in a Congressional hearing in 1965 (12).

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This figure is obtained by applying rates only for these specific diseases and only to men, since the bulk of the epidemiological studies which have been done have been done on men (11).

Then it was Dr. Levin's turn. In a prepared statement for the committee, he placed the blame for nearly a quarter million "excess deaths" on smoking. He also presented his definition of the term:

Dr. Paul Sheeha and I have made such an estimate, taking into account the age distribution of the male population, the numbers of smokers and non-smokers, and the number of deaths from various causes in 1964. Over 200,000 deaths, about one in every four, are due to excess mortality among cigarette smokers. Of the estimated 658,000 deaths among male cigarette smokers, over 33 percent were excess deaths. Lung cancer, chronic respiratory disease, and coronary heart disease accounted for the largest number -- 131,000 -- of the excess deaths among cigarette smokers.

Levin provided a tabulation of his estimate (see table). But he did not explain the basis for the numbers on which his calculations depended (12).

Reynolds, also cited by Diehl as a source, did not testify at the hearing, but his 1964 statement to which Diehl referred -- actually a letter to the editor of a health journal -- did reveal the astonishing basis for his own "excess deaths" computation (13).

He began with a report from Hammond of the American Cancer Society which stated that over a certain period there were 662 deaths among a group of men who had never smoked

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regularly, and 1,365 deaths among a similar group who had been smokers. The "excess," as he noted by subtractions, was 723.

Among the nonsmokers, 12 deaths were attributed to lung cancer, Ravenholt observed, and among the smokers 110, for a total of 122 and an "excess" among smokers of 98.

With no explanation, he then inscrutably declared that because the ratio of all the lung cancer deaths (122) to all the "excess deaths among smokers" (723) was approximately one to six, all one needed to do to figure out how many "excess deaths" from smoking might occur in any year in the whole population would be to multiply the total lung cancer deaths by six.

Thus, born of invention rather than actual observation or explicable logic, and clothed in data which defy analysis, the "excess deaths" concept continued its march through the history of the smoking and health controversy.

Although the advisory committee which prepared the 1964 Surgeon General's report had refused to mislead the public by guessing about "excess deaths," that Surgeon General himself felt no such reluctance. In May of 1965, Dr. Luther L. Terry pursued the phantom numbers in a speech at the annual meeting of the National Tuberculosis Association in Chicago:

Last January 11, there was a great hue and cry when

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Emerson Foote, Chairman of the National Interagency Council on Smoking and Health, declared that cigarettes are responsible for at least 125,000 premature deaths, and maybe as many as 300,000 deaths, in the United States a year. Exaggerated, the critics said.

The Public Health Service believes these estimates are valid. Studies of mortality ratios of smokers and non-smokers indicate that 240,000 men will this year die prematurely from diseases associated with cigarette smoking. About 138,000 of these excess or premature deaths will be from diseases clearly and definitely associated with smoking, such as cancer of the lung, larynx, oral cavity, esophagus and bladder, as well as bronchitis, emphysema and coronary heart disease. Another 102,000 excess or premature deaths will result from diseases where the relationship to cigarette smoking, while not so obvious, is nevertheless clearly indicated.

This total of 240,000 premature deaths applies to men only, because in most cases the data for women are inadequate to make precise estimates. Where data are available for women, mortality ratios for comparable levels of smoking appear to be similar to those for men, but somewhat lower. A reasonable estimate of excess deaths among women, added to the total of 240,000 for men, would bring the overall total to 300,000. I consider this total to be a reasonable estimate (14).

Terry's decision to disregard his advisory committee's judgment was one thing. Even more disturbing, however, was the case, may he added women to the illusory total, in the last three sentences quoted above. He gave not the slightest basis for his "reasonable estimate of excess deaths among women."

Raverholt reappeared briefly, applying his mysterious formula for the first time to 1966 U. S. deaths, in a 1967

speech to an anti-smoking conference in New York. This yielded him 301,360 "excess deaths" among smokers (15).

The 300,000 figure was satisfactory to Dr. William H. Stewart, then U. S. Surgeon General, when he appeared before a House Appropriations subcommittee in 1967. He said that because early "excess deaths" statistics were based only on men, their figures should be revised upward for population growth and include a guess about excess deaths among women.

A challenge by Congressman William R. Hull regarding the integrity of his claim appeared not to trouble Dr. Stewart at all. Stewart said simply that his number was "derived from methodology of Dr. Morton Levin and brought up to date from the time he did it." But he added that this was "admittedly a crude estimate" (16).

Most but not all critics of smoking have stuck to the 300,000 figure. Dr. Leonard M. Schuman of the University of Minnesota's School of Public Health took first place in the "excess deaths" sweepstakes, and still holds the record, when he said in a 1968 speech in Chicago that more than 860,000 deaths in 1963, nearly half of all U. S. deaths, "were from diseases associated with tobacco use" (17). The bulk of his numbers -- more than half a million -- came from heart disease mortality. Yet a causal connection between smoking and heart disease was disputed by the top health official in the U. S. Department of Health, Education and Welfare as recently as

1976 (18).

A year later, Dr. Peter J. Steinerohn, a syndicated newspaper columnist, quoted the Surgeon General as saying that 365,000 "excess deaths" were caused in 1965 by tobacco (19).

Dr. Joel Fort, director of a San Francisco health center, raised the number to 400,000 in 1970 (20).

But by February 1971, a new Surgeon General, Dr. Jesse Steinfeld, leaned back on the side of caution in calculating "excess deaths."

"Well," he said, "it's hard to get the exact number of excess deaths associated with cigarette smoking. But there is no question that it is the major public health problem in the U.S. today, both for men and for women. But, unfortunately, we cannot pinpoint exactly the number of excess deaths associated with cigarette smoking" (21).

As recently as March of 1977 a Berkeley, California, internist, Dr. Stanford D. Splitter, communicated with the American Cancer Society's National Commission on Smoking and Public Policy to present some "evidence of the health consequences of smoking." But he warned the ACS, in the words of the 1964 Surgeon General's report, that "the total number of excess deaths causally related to cigarette smoking in the U.S. population cannot be accurately estimated" (22).



Early in 1978, Secretary Califano announced a new "war on smoking" by the Department of Health, Education and Welfare. The blizzard of newspaper copy and editorials which followed repeated, in almost every instance, the Secretary's claim of 320,000 "excess deaths." In some cases the figure was attributed to Califano; in many others it was reported as a fact which apparently needed no attribution.

In his January 11, 1978, speech at a meeting of the National Interagency Council on Smoking and Health, Califano stated that in 1977 smoking caused 220,000 deaths from heart disease, 78,000 from lung cancer and 22,000 from other cancers, including bladder cancer, for a total of 320,000 (2).

One month later, on February 13, at a Congressional hearing, he attributed to cigarette smoking 13,000 deaths from chronic bronchitis and emphysema, 173,000 deaths from heart disease and 100,000 deaths from cancer, and stated this total to be "more than 320,000." He gave no source for any of his figures. Neither did he explain why or how the heart disease figure fell by 45,000 deaths between January 11 and February 13, or why chronic bronchitis and emphysema were included in his February 13 total but not in his January 11 total (23).

Undoubtedly, invention of "data" to support a point of view is tempting and, in some cases, an irresistible temptation. Invented data can indeed persuade; they cannot inform.

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A statement by a distinguished physician during his 1969 congressional testimony on smoking and health is pertinent. Said Dr. Milton S. Rosenblatt, "The widely publicized accusations of hundreds of thousands of deaths caused by cigarettes, and of shortening life expectancy a specific number of minutes per cigarette smoked, are fanciful extrapolations and not factus. data" (24).

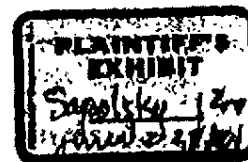
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## REVISED STATEMENT

RICHARD J. SEMENIK, PH.D.

My name is Richard J. Semeník. I am a Professor of Marketing and Dean of the College of Business at Montana State University, Bozeman, Montana. I have an undergraduate degree in marketing from the University of Michigan (1970), an MBA from Michigan State University (1971), and a Ph.D. in Marketing from The Ohio State University (1976) with specialties in advertising and consumer behavior. For the last 28 years, I have taught courses in marketing, advertising, and consumer behavior at universities in the United States and Europe. I have also taught executive seminars on these topics. I have published numerous articles on these topics using both survey/polling research methodology and experimental design methodology. I have written several textbooks discussing the topics of marketing, advertising, research methodology, and consumer decision making. I serve as a reviewer for many of the leading academic journals in these areas.

In March of 2000, I prepared an expert report in this case which details my opinions with respect to issues related to marketing, advertising, consumer behavior, consumer decision making and consumers' decisions to begin smoking, continue smoking, and whether or not to quit smoking. The current report is intended to be a supplement to that initial report now that I have made an analysis of the depositions of a sample of subscribers to the Empire Blue Cross Blue Shield program.

In April/May of 2000, defense counsel provided me with questions related to smoking initiation, smoking continuation, smoking cessation, and subscribers' awareness of the health risks of smoking and reliance on statements by the tobacco industry. I reviewed the questions prepared by counsel and, based on my background, experience and expertise, offered suggestions for revision of the questions. Those questions are attached to this report as Appendix A.

The Blue Cross Blue Shield deponents' testimony was summarized by counsel according to a form I designed. A copy of that form is attached as Appendix B. The summaries contained objective statements of each deponent's testimony. When I received the summary forms and deposition transcripts, I analyzed each deponent's responses to the questions posed by counsel. Based on my analysis, I then recorded each deponent's response to the questions posed by counsel on a spreadsheet. A copy of that spreadsheet is attached as Appendix C. In the course of this work, I reviewed 90 percent of the transcripts themselves to locate information related to the questions.

I reviewed the depositions transcripts and summaries for two reasons. First, I wanted to review deponents' responses to determine whether the opinions expressed in my expert report regarding influences on smoking initiation, smoking continuation and smoking cessation were supported. In fact, the opinions expressed in my original report were supported by my reading of the subscriber depositions. Specifically, the subscriber depositions confirmed my opinion that:

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1. Advertising cannot affect primary demand but advertising does affect brand choice.
2. Peers, not advertising, influence people to begin smoking.
3. Images in advertising do not undermine health warnings or information.

The second reason for undertaking a review of the deposition transcripts and summaries was to obtain the answers to the questions posed by counsel so that a statistical analysis of those responses could be undertaken. The statistical analysis of my review was prepared by Dr. Wecker (Appendix D).<sup>1</sup> Some of Dr. Wecker's results are summarized below:

I. The characteristics of the deponents are as follows:

A. The average age of deponents is 58.8 years.

B. Education of deponents falls into the following categories.

1.	Some elementary school	0.6 percent
2.	Elementary school	2.6
3.	Middle school/junior high	6.4
4.	High school	37.2
5.	Some college	29.3
6.	Undergraduate degree	11.5
7.	Some graduate work	1.3
8.	Graduate degree	10.9

C. The occupation of respondents was:

1.	Blue collar	18.6 percent
2.	Clerical/service	41.7
3.	Professional	32.1
4.	Retired	1.3
5.	Homemaker	5.8

II. With regard to the decision to begin smoking:

A. Average age at which deponents began to smoke regularly is 17.33 years.

<sup>1</sup> Dr. Wecker analyzed just the 156 three-hour depositions, not the Group of 64<sup>1</sup> depositions, which, I understand were not completed by order of the Court

- B. When asked an open-ended question about smoking initiation, the following are the primary reasons given by deponents for starting to smoke:

	Including "Unknown" & "Not Asked"	Not Including "Unknown" & "Not Asked"
1. family	10.9 percent	11.6 percent
2. friends	64.7	69.2
3. rebellion	2.6	2.7
4. curiosity	7.1	7.5
5. advertising	0.0	0.0
6. other	8.3	8.9
7. unknown	5.8	
8. not asked		

Once again, these reasons are consistent with my expert report indicating that peers, either friends or family, represent the primary reason individuals begin smoking.

When asked specific questions about whether advertising played any role in smoking initiation, 7.7 percent of all deponents (8.1 percent of deponents who responded) mentioned advertising as a factor. No deponent identified advertising as a primary reason for their beginning to smoke. Many deponents said that they recalled brand advertising and relied on brand advertising as a basis for choosing or switching brands. This effect is captured in a later question and will be discussed shortly.

- III. The percentage of deponents who have quit smoking is 67.9 percent. Deponents offered the following reasons for why they quit smoking<sup>2</sup>:

	Including "Unknown" & "Not Asked"	Not Including "Unknown" & "Not Asked"
A. Health	80.9 percent	83.3 percent
B. Cost	5.7	5.9
C. Other	10.4	10.8
D. Unknown	1.9	
E. Not asked	0.9	

The vast majority of deponents quit smoking out of a concern for their health.

<sup>2</sup> Adjusted to show only former smokers.

- IV. Also related to health, the following proportion of respondents indicated that while they were smoking they were aware that smoking would cause:

	Including "Unknown" & "Not Asked"	Not Including "Unknown" & "Not Asked"
A. Serious or fatal illness	86.5 percent	95.1 percent
B. Lung cancer	87.8	94.5
C. Heart disease	78.8	90.4

In addition, many deponents offered the explanation that family, friends or doctors urged them to quit smoking for health reasons. Additional information regarding the awareness of health risks is revealed by:

- A. 91.2 percent of all deponents who responded had heard the term "coffin nails" or "cancer sticks" and understood the terms to mean that one could contract serious or even fatal illnesses from smoking.
- B. Nearly every deponent who expressed a belief, believed that the American Cancer Society (99.1 percent) and the Surgeon General of the United States (97.6 percent) are more credible than the tobacco industry regarding issues of smoking and health.
- C. A very small percentage of deponents had ever heard of or knew anything about the tobacco industry organizations C.T.R. (7.3 percent of deponents who responded) or T.I. (16 percent of deponents who responded). Similarly, a very small percentage had ever seen the "Frank Statement" (2.8 percent of deponents who responded).

- V. With regard to the decisions related to whether to continue smoking:

- A. 93.8 percent of deponents who responded could not identify additional information that would have caused him/her to quit earlier or not to have smoked at all.
- B. 96.6 percent of deponents who responded indicated that they did not change their smoking behavior because of any statement made by the tobacco industry.
- C. 82.0 percent of those who responded believed that no cigarette advertising caused him/her to change any behavior in any way with respect to smoking behavior. 14.0 percent of those who responded believed that cigarette advertising played a role in their decisions to switch brands which would be a normal behavioral response to advertising.

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- D. 90.1 percent of those who responded indicated that they knew that it would be difficult to quit smoking.

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Richard J. Semenik

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